NATIONAL MUSEUM OF VICTORIA

THE JOURNAL of The Department OF AGRICULTURE

VICTORIA · · · AUSTRALIA

Vol. XXXVI.—Part 3. MARCH, 1938. PRICE, 3D.

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Issued by direction of the Hon. E. J. Hogan, M.L.A., Minister of Agriculture.

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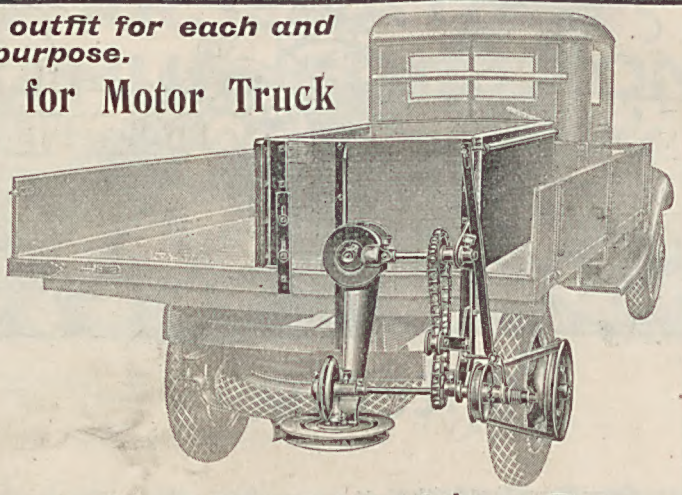

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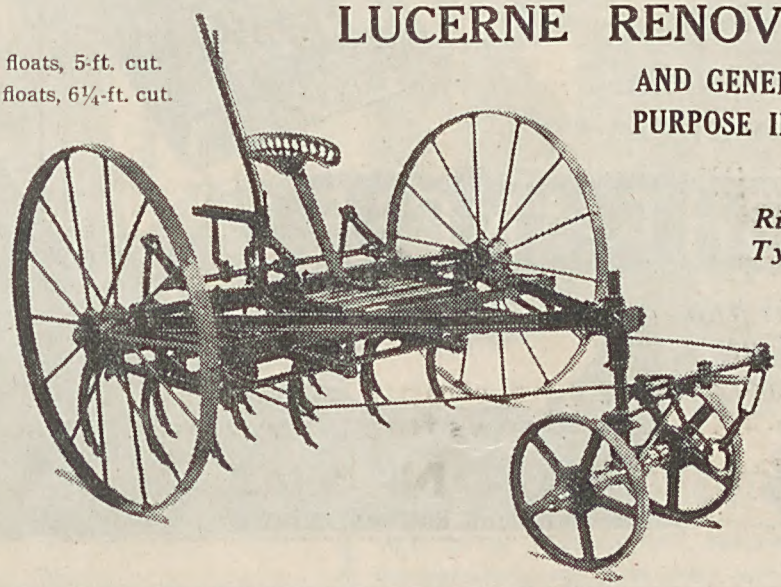

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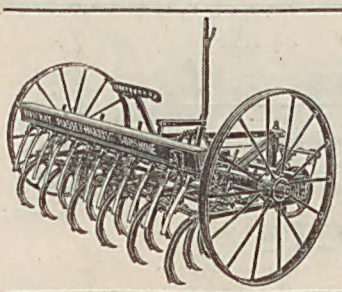

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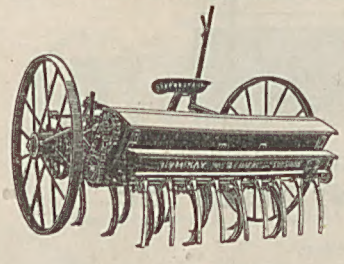

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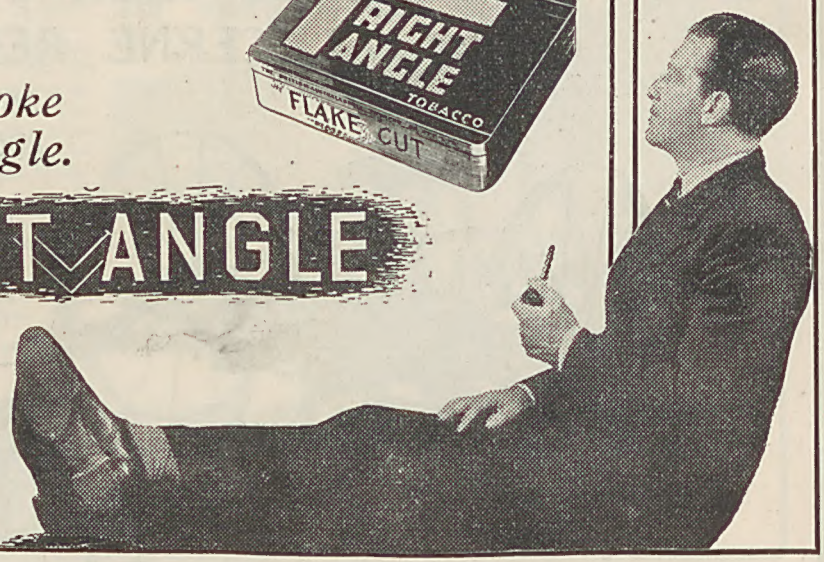

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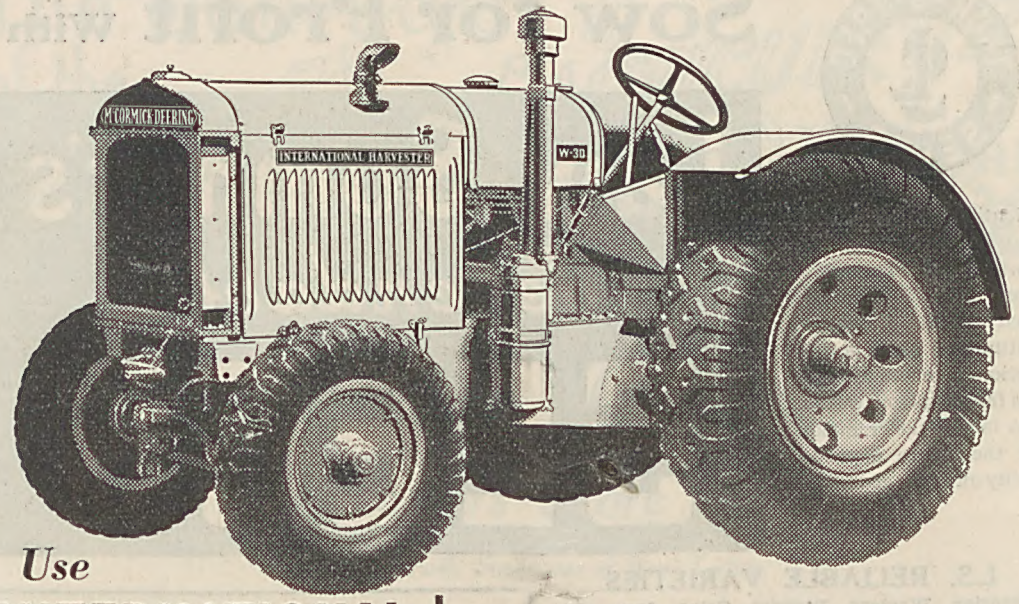

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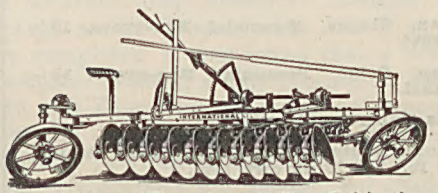

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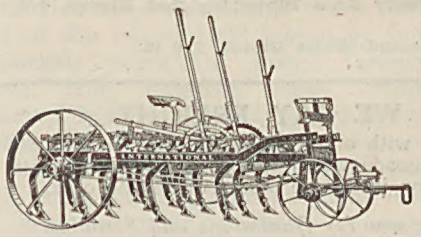

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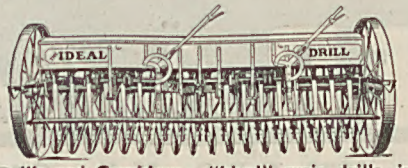

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Victorian, Western District, Colac Area, old pasture Rye-grass, 13/6 bushel.

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Wimmera Rye-grass (McDougall's strain), machine dressed, 6/6 bushel.

Cocksfoot, Victorian, Mirboo North, old pasture, 1/5 lb.

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Sub-clover, Mt. Barker (Midseason strain), 1/6 lb.; 1/5 lb. in cwt. lots. Special prices for larger quantities.

Alsyke Clover, 1/8 lb.

Alsyke and White Clover, mixed, 1/7 lb.

Cow Grass, New Zealand Giant Colonial, 1/5 lb.; 150/- cwt.

White Dutch Clover, 1/6 lb; 1/5 lb. in cwt. lots.

New Zealand Wild White Clover, 2/- lb.

Lotus Major (Greater Birdsfoot Trefoil), 3/- lb.

Lotus Corniculatus (Birdsfoot Trefoil), 3/- lb.

"Pilca-dutta," Hunter River Lucerne, broad leaf, 1/9 lb.; 1/8 lb. in cwt. lots.

Hunter River Lucerne (contract grown), broad leaf, 1/8 lb.; 1/7 lb. in cwt. lots.

Hunter River Lucerne (broad leaf), good quality, 1/7 lb.; 1/6 lb. in cwt. lots.

Rape, True Giant Kangaroo, in 1 cwt. sealed bags, 8d. lb.; 65/4 cwt.

Rape, Dwarf Essex, English, 7d. lb.; 56/- cwt.

Rape, Dwarf Essex, Dutch, 6d. lb.; 50/- cwt.

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NATIONAL MUSEUM OF VICTORIA

The Journal of the DEPARTMENT of AGRICULTURE of VICTORIA

Dairy Farm Competition

Newcomers Score Well

By W. J. Yuill, Supervisor of Herd Testing

DURING the spring of 1937, the Victorian United Cow Test Association conducted its Annual Dairy Farm Competition. On this occasion some extensive changes in the placings occurred, and, when the final figures were completed it was found that a new State Champion Farmer, a new Champion Zone, and seven new Zone winning farms had appeared.

Despite the partial drought conditions, which existed in portions of the western area and in Eastern Gippsland, and the general effect of the infantile paralysis outbreak, which was known to have kept some farmers from competing, the number of entries in this year's contest fell short of the record 1936 season by four only. Apparently there are many farmers who refrain from entering these competitions because they are afraid they would be outclassed by those well known farms that have topped the list for several years. But there are many other farms which possess excellent features, a fact very convincingly shown in this year's contest. Mr. J. Bullingham, of Tongala, won through to the position of State Champion in his second year of entry, while Mr. E. V. Harley, of Korumburra, and Mr. S. Polmear, of the Eskdale Association, each became Zone champion in his initial year in the competition.

Other newcomers to do well were Mr. R. Skinner and Mr. J. J. Wilson, of Zone 9, both of whom must be regarded as potential Zone winners. This applies also to Mr. V. R. Neilsen, of North Murchison Association, who in his first year scored 820 points, which placed him in the Champion four of the inter-zone competition.

The list of section winners shows that no fewer than seventeen new men had a high degree of excellence in at least one feature of their farms. That seven new Zone winners appear is also evidence of the progress being made in several districts.

Since previous winners of Zones may not compete for the section prizes, this phase of the contest is made easier for all other entrants. The previous Zone winners must, however, be prepared each year to compete with all comers for the position of Zone Champion, and also for the State Championship. The highest scoring farm of each Zone wins the First Class Certificate presented by the Royal Agricultural Society, in addition to the *Stock and Land* trophy.

Mr. Bullingham's success was remarkable for the fact that he carried off the Zone and the State Championship in his second year in the competition. A cheque for ten guineas donated by Meggitt Ltd. goes with this honour. He also won three of the section prizes, as well as one of the silver-mounted miniatures of the C. F. C. Championship Shield, which is competed for in the interzone competition.

The interzone competition is based on a comparison of the aggregate scores of the leading four farms of each zone. The Championship Shield and miniatures are presented by Commonwealth Fertilizers and Chemicals Ltd.

The honour of Champion Zone for 1938 goes to Zone 3, i.e., the Tongala, Shepparton, Murchison, and Stanhope area. The four leading competitors in this zone, Mr. J. Bullingham, Mr. P. Freestone (Champion Farmer 1937 and Reserve Champion on this occasion), Mr. J. B. Watson, a previous Zone winner, and Mr. V. R. Neilsen, will receive a miniature of the C.F.C. Shield. Runners-up for the past two years, the winners thoroughly deserve their success. Last year's winning zone, Zone 4, this year occupies second place.

COMPETITION FOR "CHAMPION ZONE" AND POSSESSION OF C.F.C. SHIELD—BEST FOUR FARMS IN ZONE.

First—Zone 3.

J. Bullingham	910
P. Freestone	895
J. B. Watson	845
V. R. Neilsen	820
	3,470

Second—Zone 4.

H. E. Keele and Son ..	880
T. E. Bond	879
J. D. Pierce	866
R. G. Anderson	839
	3,464

CHAMPION FARMS.

Prizes, £10 10s. and £5 5s. donated by Meggitt Limited.

	Points.
Champion Farm—J. Bullingham, Tongala	910
Reserve Champion—P. Freestone, North Murchison	895

FARM COMPETITION ZONES.

The 107 Herd Testing units throughout the State are grouped into 10 Zones as follow:—

Zone No. 1.—Walwa, Upper Murray, Tallangatta, Eskdale, Kiewa Valley.

Zone No. 2.—Myrtleford, Moyhu, Milawa, Swanpool, Alexandra, Euroa.

Zone No. 3.—Stanhope, North Murchison, North Shepparton, Tongala, Werribee, Undera.

Zone No. 4.—Cohuna, Leitchville, Kerang, Swan Hill, Pyramid Hill, Rochester, Calivil.

Zone No. 5.—Coleraine, Casterton, Condah Swamp, Portland, The Sisters, Mortlake, Warrnambool, Paschendale, Woodford, South Glenelg.

Some members of the grade Friesian herd owned by Mr. J. Bullingham, Tongala, Champion Farmer for 1937.

Portion of the herd of Mr. P. Freestone, North Murchison, Reserve Champion Farmer for 1937.

Zone No. 6.—Pomborneit, Nalangil, Beeac, Ondit-Irrewarra, Apollo Bay, Winchelsea, Dreeite, South Ballarat, Newstead, Noorat, Camperdown, Keayang, Cobden, Bacchus Marsh, Ecklin South, Geelong, Gellibrand Valley, South Purrumbete, Port Campbell.

Zone No. 7.—Orbost, Bairnsdale, Sale, Maffra, Traralgon, Yinnar.

Zone No. 8.—Warragul, Gainsborough, Jindivick-Neerim, Narracan, Boolarra, Mirboo North, Pakenham, Bunyip, Yarra Valley.

Zone No. 9.—Yarram, Toora, and Welshpool, Stony Creek, Dumbalk North, Dumbalk, Leongatha, Fish Creek, Foster.

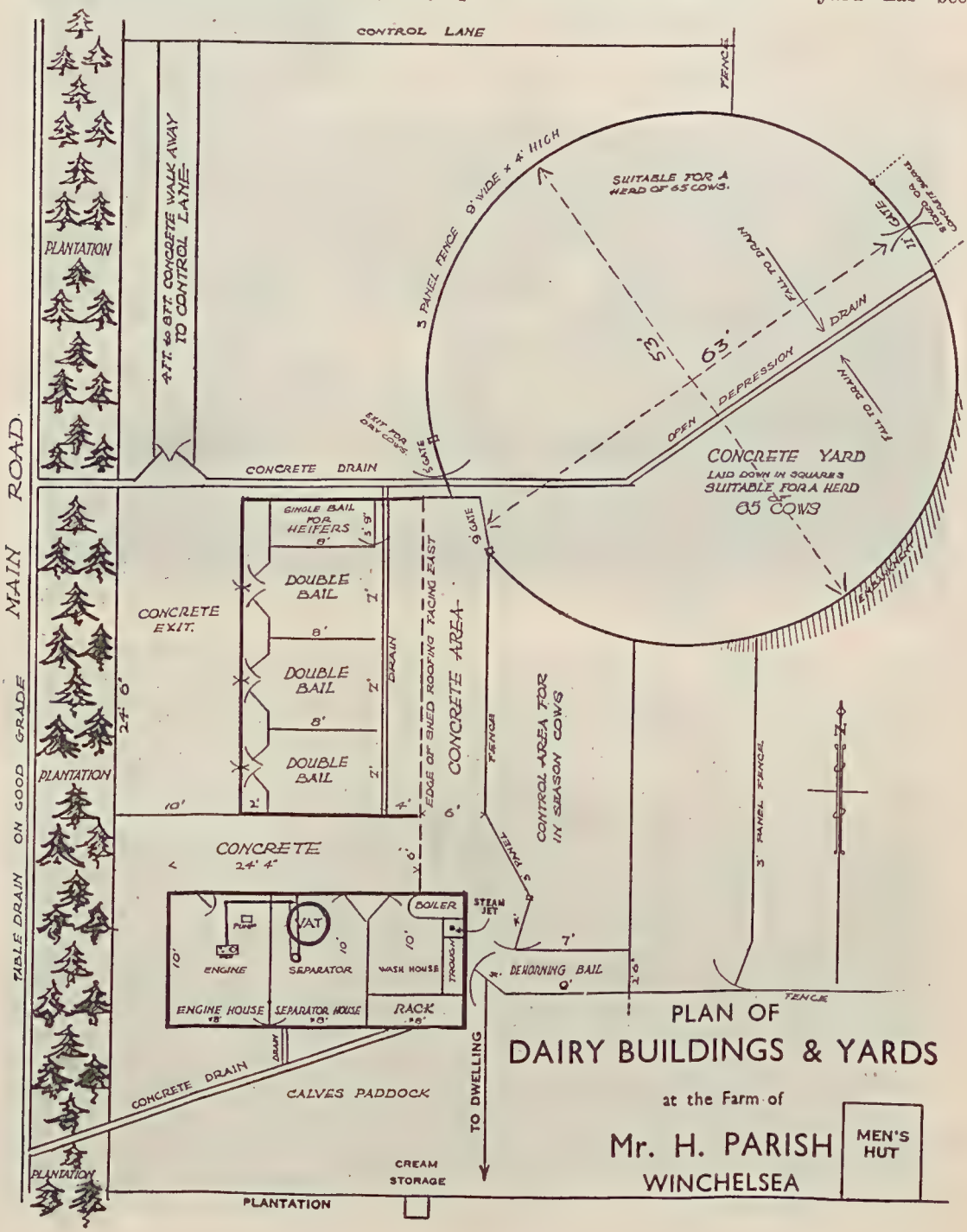
Zone No. 10.—Wonthaggi, Loch, Mountain View, Kongwak, Poowong, Lang Lang, Korumburra Peninsula.

Lessons from the Competition.

This competition, which has been running since 1930, is not without its critics, who consider it to be something in the nature of a "frill" that has been superimposed in the general plan of herd recording work. There is a saying that "it is possible to cover the sun with a penny—if the penny be placed near enough to the eye;" so with the critic, he may be "too close up" to truly weigh up the evidence, or to appreciate the importance and significance of the competition.

Of course, it is not possible to set down definitely the considerable beneficial effect the competition has had on the industry; it is possible, however, to measure accurately its influence in the case of individual competitors. For example, when Mr. H. Parish, of Winchelsea, first competed some years ago, his farm appeared a long way down the Zone list. This year he occupies the proud position of Zone leader. His progress has been one of steady development, as evidenced by the fact that in

the first two sections of the competition only seven of the possible 265 points were lost. The very large crowd that visited the farm on the occasion of the V.U.C.T.A. field day in September last was much impressed with the splendid plan of farm layout, the water system, and the home and gardens. The manner in which the old cowshed and yard has been



improved and worked into an excellent plan is shown in this report.

As a result of the improvements, Mr. Parish's two expert daughters very largely control the milking operations and the dairy work, and they do not complain of drudgery. The whole of the outer receiving yards, the bailing yards, all shed floors, the walk through bails, and the extensive "walk-away" are of concrete, as is also the sound system of drainage The herd is machine milked, the engine-room, separator, and wash-up rooms each being a separate unit. In the wash-up room, there is a steam boiler, wash trough, drainage rack, and steam jet for sterilizing the utensils.

Ample water is laid on for every purpose, including the thorough flushing of the whole concrete surface. This is facilitated by the fact that everything, except the engine bed and separator block, is bracketed to the wall. In the milking shed, the bail divisions are carried through from a single post at the rear of the bail to the front wall; these divisions also carry the bailheads, and the feed boxes. In the open sheds, which face from east to north, the sun, the hose, and the broom can reach each square inch of the floor surface. As the concrete floors are built up to carry the bottom wall plate, there is no fear of affecting the life of the timber by excessive wetness. The cream storage is well removed from the environment of the cowyards and sheds. Although the buildings are unpretentious, they possess every necessary feature of a modern efficient dairy farm.

These features are mainly to be found on the competing farms of each Zone, where a score of 90 or more points has been awarded by the judge. The maximum score of 105 is made up as follows:—sheds 12 points, yards 7 points, gateways 5 points, approaches 5 points, drainage 5 points, water-heating apparatus 12 points, separator 7 points, milking methods 10 points, dairy utensils 7 points, cream or milk-cooling system 10 points, dairy and location 25 points.

A competitor can therefore be shown just where he lost points. It may be, that he has an excellent shed and dairy, but the least said about the yards, the gateways, or maybe the drainage the better. Some competitors may not water-cool their cream; this means a loss of 10 points.

The old kerosene-tin, kitchen-fire system of providing hot water is never seen on a competition farm. Steam under pressure scores 12 points, flowing steam 11 points, while 10 points are awarded where ample boiling water is available.

Messrs. J. B. Watson, Zone 3, H. Parish, Zone 6, and J. J. Wilson, Zone 9, each scored

The sire and some members of Mr. J. J. Wilson's herd at Agnes. Fine shelter is provided by pines and gums.

Winners in each of the ten Zones, with Details of the Various Sections.

(* Denotes Winners of Previous Competition.)

Sections.	Maximum Points.	J. Bullingham, Tongala Association.	H. E. Keele and Son, Kochester Association.	A. T. James, Swanpool Association.	G. Bright,* Dumbalk Association.	B. J. Boardman,* Yinnar Association.	L. Senini,* Narracan Shire Association.	S. Polmear, Eskdale Association.	E. V. Harley, Korumburra Association.	H. Parish, Winchelsea Association.	W. Watson, Warrnambool Association.
Section "B."											
Layout of Farm ..	50	49	47	48	49	45	50	45	44	50	50
Management and Equipment	25	25	25	24	24	23	22	24	24	25	23
Shade and Shelter ..	20	10	19	18	18	20	17	19	19	20	18
T.B. Tested Herd ..	5	..	..	..	..	..	..	..	..	..	..
Water Systems ..	20	20	20	20	19	19	19	19	17	20	17
Book-keeping ..	20	20	19	19	19	20	18	17	20	19	15
Home and Surroundings	20	19	17	20	20	18	20	19	17	20	16
Total Points ..	160	143	147	149	149	145	146	143	141	154	139
Section "C."											
Sheds, Yards, Drains, &c.	70	69	66	69	67	66	61	67	68	70	66
Milk and Cream Storage	25	14	25	25	23	23	22	23	15	24	20
Cooling System ..	10	10	10	9	10	10	10	10	10	10	10
Total Points ..	105	93	101	103	100	99	93	100	93	104	96
Section "D."											
Herd Sires	30	30	28	28	27	29	29	24	27	28	29
Conformation of Progeny	10	10	10	8	8	9	9	9	9	8	9
Ancestral Production ..	20	13	12	13	16	12	11	10	11	9	13
Equal Parent Index ..	40	38	40	40	40	21	25	..	30	18	..
Production per £100 of Farm	50	50	50	49	46	50	50	50	49	37	50
Herd Development ..	40	37	33	26	30	22	20	19	24	14	29
Herd Replacement ..	20	9	20	13	6	5	5	9	5	8	8
Conformation and Quality of Herd ..	30	28	29	25	29	27	27	28	28	27	28
Control of Herd Sire ..	10	9	8	9	10	10	8	9	9	9	10
Total Points ..	250	224	230	211	212	185	184	158	202	158	176
Section "E."											
Pigs and Housing ..	50	44	46	48	50	43	38	44	41	45	20
Poultry and Housing ..	20	15	18	17	18	16	16	16	15	20	16
Total Points ..	70	59	64	65	68	59	54	60	56	65	36
Section "F."											
Carrying Capacity of Farm	30	25	25	23	22	27	27	25	23	25	24
Fodder Reserves ..	50	50	50	50	50	50	50	50	50	40	50
Pastures	100	100	97	93	90	87	96	91	93	83	90
Fertilizing Practices ..	100	100	100	100	100	100	100	100	100	100	100
Total Points ..	280	275	272	266	262	254	273	266	266	248	264
Section "G."											
Net Return per £100 of Farm Value ..	120	116	66	54	61	86	72	89	48	52	55
Grand Total ..	985	910	880	848	852	838	822	816	806	781	766

Some high producing members of Mrs. J. M. Scott's herd, St. Albans (Geelong Association), which scored the maximum number of points for conformation, uniformity, and condition. Mrs. Scott's dairy also gained highest points in the dairy sanitation section.

104 points, while Messrs. S. Polmear, Zone 1, Dr. J. L. Henderson, and A. T. James of Zone 2, H. E. Keele and Son and J. D. Pierce of Zone 4, Mrs. J. M. Scott and F. Johnson of Zone 6, G. Bright, D. Spencer, and R. Skinner of Zone 9, all had scores of 100 or more. Twenty-seven others exceeded 90 points, several being very close to the century. All these competitors have excellent sheds, dairies, and appurtenances.

The gospel of concrete for impervious floors in dairy buildings, yards, and drains, also the use of steam or an ample supply of boiling water for the thorough sterilizing of dairy utensils, was effectively proclaimed throughout the State, in the dairy sanitation lectures during the ten years of the Better Farming Train's tours. In addition, it has been effectively carried on by the extensive system of field days which are held on the successful competition farms in almost every dairying area in the State.

Effective Water Schemes.

Where there is a limited water supply, it can only be sparingly used, even though the farmer may appreciate the need for its more extensive use. In the competition 10 points are allotted for a good stock service, and 10 points more for a satisfactory domestic supply. Fifteen of the competitors scored the full 20 points, while 31 others were within two points of the possible score. This can be regarded as a very satisfactory standard indeed, for the judges seek a water service that is laid on to the farm buildings, as well as to the kitchen, the wash-house, the bathroom, and the gardens; and above all, they look for ample water for all stock. Sometimes the stock section is adequately catered for, but the home section has remained undeveloped. At other times, the opposite is found, but rarely do the judges find that both sections are neglected.

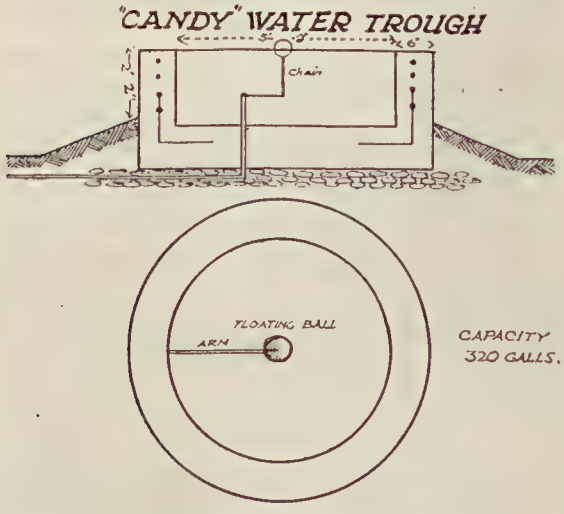
Quite generally, however, it can be said that this very important phase of farm and home planning receives too little attention. At times great loss and hardship occur where surface catchment or non-permanent water courses are depended upon. What is good enough in a normal year, may be a woefully inadequate water supply following a long period of low rainfall. Along the Mitta and Kiewa Valleys, permanent springs in the hills have been extensively harnessed; a lead of pipes brings a cheap permanent and abundant supply of water by gravitation, for the various needs of the farm.

The windmill is a prime favorite throughout the western plains and eastern Gippsland. They are, however, not without a serious weakness, for sometimes prolonged periods of calm

will cause herdowners grave anxiety. There may be unlimited supplies of water below ground, while the herd famishes for a drink. The herd may, of course, be driven to distant supplies, or carting may be resorted to, or maybe an engine and pump are put to work to overcome the difficulty, until the mill again begins to turn. A farmer who has to cart water for his dairy herd usually gets a shock when he sees the quantity that they consume. Approximately 10 gallons a day is a fair estimate of each cow's daily needs. Large cows on test have been known to drink 40 gallons in 24 hours. Since normal milk is 87 per cent. water, it is not difficult to see why depriving a cow of drinking water is one of the commonest means of drying up its milk yield. Recent investigations in England, show that well-fed sows will drink up to 10 gallons a day, if given the opportunity to do so.

Perhaps those farmers who possess a permanent running stream through their farm, have never fully appreciated how great a blessing it really is. Of course, the banks and the bottom of the stream may not be all that could be desired; indeed, boggy creeks are often fatal to weak cattle, especially heavy in-calf dairy cows. Messrs. McNeil Brothers., of Warragul, have effectively solved this problem on their farm, for in each of their paddocks they have made sound crossings and drinking places by laying down discarded railway sleepers. Thus, good approaches and running-water drinking places have been established.

In the steep hills of Jerralang, Mr. B. J. Boardman has a number of water tanks, which



Showing the construction of a "Candy" trough.

hold approximately 12,000 gallons. This is reticulated through a system of ball-tap troughs to handy drinking places for his dairy herd. At Paschendale, Mr. H. Woodruff pumps from a distant creek to a large storage tank at the home, from where he can supply otherwise waterless paddocks, through a system of ball-tap troughs. The service provides ample water for the home, the gardens, and the lawns; as well as all the farm buildings and stock.

Messrs. H. Westbury and E. C. Hutchings of Irrewarra, and Mr. H. Parish of Winchelsea, each have windmills and a battery of concrete "Candy" troughs, similar to the one illustrated. There are six at Mr. Parish's, seven at Mr. Hutchings, and fourteen at Mr. Westbury's. On the last-mentioned property some 5,000 gallons are thus added to the main reserve tank, as the whole battery of troughs are automatically filled from it. A period of calm does not quickly embarrass these owners.

"Candy" Troughs.

Where gravel and sand are easily or cheaply obtained, the "Candy" trough makes an excellent watering place, for it can be made by any handy man. Because the trough is round, horned cattle cannot prevent the more timid cows from drinking.

In making a "Candy" trough moulds made from sheets of corrugated galvanized iron are used. Two sheets fastened together by bolts are used for the outer circle and two for the inner circle. If oil be rubbed on to the forms before they are placed in position, stripping will be easier. The base of concrete, 6 inches deep, should be laid on firm ground and should extend 6 inches from the bottom of the tank; thus the diameter of the circular base should be at least 7 ft. 9 in. The water supply pipe is placed in position before starting the wall.

Before the concrete base has set, ¼-in. rods, 2 feet long and bent at right angles, are set at intervals of 6 inches in such a position that they will project into the base towards the centre and up into the wall. Place the form work into position. Add the concrete and in addition place ¼-in. bars tied in a circle in the centre of the wall at intervals of 6 inches as reinforcement.

Use a mixture of three parts of ½-in. screenings or gravel, two parts sand, and one of cement. Two men can erect such a trough in six hours and the cost is within the reach of

every dairy farmer. Troughs built on the fence line will serve two paddocks.

On the steep hills at Skenes Creek, near Apollo Bay, Mr. J. H. B. Morris has solved the water problem by installing a hydraulic ram. It was observed that on hot days dairy cows refused to go down into the steep gullies for water, and this had a serious reaction on the herd's milk yield. By installing a hydraulic ram in the creek, about 200 feet vertically below the sheds, approximately 1,100 gallons of water can be raised daily to the reserve tank. A "Candy" trough in the receiving yards connected by ball-tap to the reserve tank provides a continuous and easily obtained water supply throughout the year. Another observation Mr. Morris has made is that bucket calves drink freely from the water trough.

Showing the use of a hydraulic ram on Mr. J. H. Morris' farm at Apollo Bay. Set in a creek, 200 feet vertically below the sheds, the ram forces the water 800 feet up a steep gradient to a reserve tank which supplies the "Candy" trough.

The hydraulic ram is not costly, and it has no running costs, while depreciation is practically nil. There are many places where they could be installed and give excellent service. The principle of the ram is the use of the momentum of a slight fall of water to force part of the water used to an elevation many times as high as the fall of water used to operate the ram. The efficiency of the ram is affected by several factors, such as the fall of water obtained, the height the water has to be elevated, and the length and diameter of the pipe line through which the water has to be driven, but as there are no running costs the ram can be allowed to work continuously. Mr. Morris' ram is set 24 feet below the small basin where the spring gathers. The water is fed to the ram by 120 feet of 1¼-in. pipe, from whence a ½-in. pipe

line 800 feet long forces the water approximately 200 feet to the top of the tank at the sheds.

If the competition could claim no other result than that of focusing attention on the need for an effective water supply for dairy farms, it would have served a very definite purpose. Without such, a high degree of dairy sanitation is not possible, and further, the ability of dairy cows cannot be fully developed.

It is true also, that the beautiful suburban-like homes, which each year are becoming more numerous in the country, and in which electric power, light, and heating are combined with a hot and cold water service in the kitchen and bathroom, could not be so fully developed without a permanent water supply. In addition, the nicely trimmed lawns, beautiful flower, vegetable, and fruit gardens which must tend to a better appreciation of life, and a better outlook could not exist.

Winning Farms in Section "B".

(A prize of 10 cwt. superphosphate, donated by Commonwealth Fertilizers and Chemicals Ltd., will be presented to the winner in each Zone).

Farm layout, 50 points; shade and shelter, 20 points; condition of equipment, &c., 30 points; bookkeeping, 20 points; water system, 20 points; home, 20 points; maximum, 160 points.

Zone.	Name of Competitor.	Association.	Points.
1	A. Crosthwaite ..	Kiewa Valley ..	149
2	A. T. James ..	Swanpool ..	149
3	V. R. Neilsen ..	North Murchison	147
4	H. E. Keele and Son	Rochester ..	147
5	H. Woodruff ..	Paschendale ..	141
6	Hy. Parish ..	Winchelsea ..	154
7	Wm. F. Treasure ..	Sale	148
8	McNeil Bros. ..	Warragul ..	148
9	J. J. Wilson ..	Toora–Welshpool	148
10	E. V. Harley ..	Korumburra ..	141

Winning Farms in Section "C".

(A "two-guinea order," donated by D. and W. Chandler Ltd., Hardware Merchants, will be presented to the winner in each Zone).

Sheds, yards, gateways, approaches, drainage, water heating, milking methods, separator, utensils, milk and cream storage, cooling methods—maximum points, 105.

Zone.	Name of Competitor.	Association.	Points.
1	S. Polmear ..	Eskdale ..	100
2	A. T. James ..	Swanpool ..	103
3	V. R. Neilsen ..	North Murchison	95
4	H. E. Keele and Son	Rochester ..	101
5	Wm. Watson ..	Warrnambool ..	96
6	Hy. Parish ..	Winchelsea ..	104
7	W. F. Treasure ..	Sale	89
8	Mrs. A. V. Hardie..	Warragul ..	97
9	J. J. Wilson ..	Toora–Welshpool	104
10	E. Smethurst ..	Mountain View ..	98

Production and Reproduction.

Although Sections D and E deal mainly with dairy cows and their production, several competitors have shown excellent returns with

Winning Farms in Section "D".

(A £2 2s. cash prize, donated by the proprietors of *Live Stock Bulletin*, will be presented to the winners).

Registered sire, type and quality of daughters, 40 points; production ancestry, 20 points; production index of sire's daughters, 40 points; tested cows and production of nominal butter-fat per £100 of farm value, 50 points; development of herd's production, 40 points; proportion of junior to mature cows, 20 points; inspection of herd, 30 points; bull control, 10 points; maximum points, 250.

Zone.	Name of Competitor.	Association.	Points.
1	S. J. Edwards ..	Kiewa Valley ..	186
2	A. T. James ..	Swanpool ..	211
3	J. Bullingham ..	Tongala ..	224
4	J. D. Pierce ..	Rochester ..	237
5	Wm. Watson ..	Warrnambool ..	176
6	J. H. B. Morris ..	Apollo Bay ..	195
7	S. A. Ross ..	Sale	200
8	Mrs. A. V. Hardie	Warragul ..	201
9	G. J. Howell ..	Leongatha ..	214
10	E. V. Harley ..	Korumburra ..	202

Winning Farms in Section "E".

(A cash prize of £1 1s., donated by Pig Breeders' Societies of Victoria, will be presented to the winners).

Registered boar, 5 points; quality of progeny, 10 points; appearance and quality of herd, 25 points; housing and control, 10 points; poultry, 10 points; housing, 10 points; maximum points, 70.

Zone.	Name of Competitor.	Association.	Points.
1	A. Crosthwaite ..	Kiewa Valley	60 (equal)
	S. Polmear ..	Eskdale	
	E. J. Parkhill ..	Eskdale	
2	A. T. James ..	Swanpool ..	65
3	E. J. Brisbane ..	North Murchison	62 (equal)
	Geo. Billingham ..	Nth. Shepparton	
4	H. E. Keele and Son	Rochester ..	64
5	H. Woodruff ..	Paschendale ..	58
6	Hy. Parish ..	Winchelsea ..	65
7	W. F. Treasure ..	Sale	58
8	C. Dineen ..	Narracan Shire ..	53
9	J. J. Wilson ..	Toora–Welshpool	64
10	F. Unthank and Son	Peninsula ..	59

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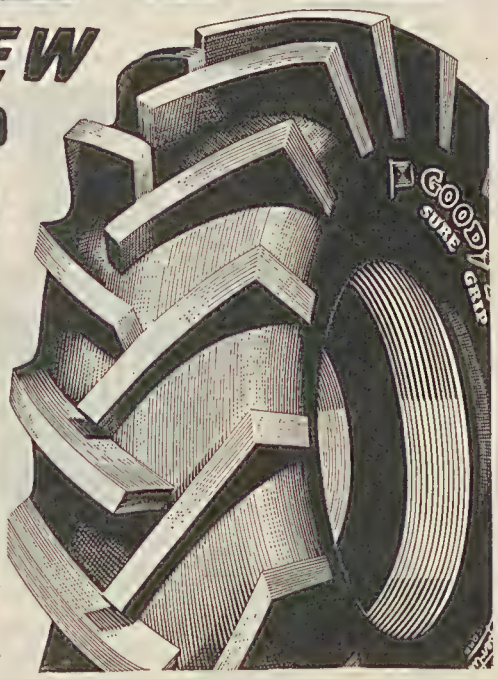

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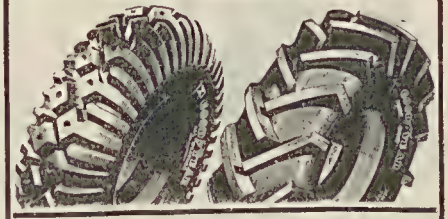

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fowls and pigs. Mr. F. Denny, at Paschendale, has 400 white Leghorns which are controlled in commodious scratching pens, automatic feeding and drinking facilities being provided. Mr. Denny uses 25 gallons of skim milk per day for his poultry. The gross returns from this section were more than £5 per week for the year.

The pig returns of Messrs. F. E. Mathers, Cohuna; R. R. Craig, Beeac; G. Bright, Dumbalk; J. J. Wilson, Agnes; R. Skinner, Fish Creek; D. Spencer and G. J. Howell, Leongatha; H. E. Keele and Son and R. S.

Winning Farms in Section "F".

(A prize of 10 cwt. of superphosphate, donated by Commonwealth Fertilizer Co., will be presented to the winner in each Zone.)

Farm value per cow, 30 points; fodder reserve, 50 points; pasture and legume areas, 100 points; fertilizing, 100 points; maximum points, 280.

Zone.	Name of Competitor.	Association.	Points.
1	E. J. Parkhill ..	Eskdale ..	271
2	W. J. O'Brien ..	Moyhu ..	267
3	J. Bullingham ..	Tongala ..	275
4	H. E. Keele and Son	Rochester ..	272
5	H. Woodruff ..	Paschendale ..	268
6	H. Westbury ..	Ondit–Irrewarra	264
7	A. E. Langford ..	Sale	269
8	C. Dineen ..	Narracan Shire	266 (equal)
	L. Savage ..	Narracan Shire	
9	Wm. Horn ..	Leongatha ..	268
10	W. H. Pratt ..	Mountain View ..	269

Winning Farms in Section "G".

(A cash prize of £1 1s., donated by the Baltic Simplex Co., will be presented to the winners.)

Maximum points, 180.

Zone.	Name of Competitor.	Association.	Points.
1	S. Polmear ..	Eskdale ..	89
2	A. T. James ..	Swanpool ..	54
3	J. Bullingham ..	Tongala ..	116
4	F. E. Mathers ..	Cohuna ..	82
5	F. Dennys ..	Paschendale ..	56
6	J. H. B. Morris ..	Apollo Bay ..	80
7	S. A. Ross ..	Sale	76
8	H. Turner ..	Narracan Shire ..	72
9	P. Vagg	Fish Creek ..	86
10	E. Smethurst ..	Mountain View	58

Special Classes.

(Prize of £1 1s. donated by Australian Cement Ltd., for best dairy in each Zone.)

Zone.	Name of Competitor.	Association.	Points.
1	J. Crosthwaite ..	Kiewa Valley ..	25
2	A. T. James ..	Swanpool ..	25
3	V. R. Neilsen ..	North Murchison	20
4	H. E. Keele and Son	Rochester ..	25
5	F. Dennys ..	Paschendale ..	22
6	Mrs. J. M. Scott ..	Geelong ..	25
7	E. W. Langford ..	Sale	20
8	McNeil Bros. ..	Warragul ..	25
9	J. J. Wilson ..	Toora–Welshpool	25
	D. Spencer ..	Leongatha	
10	E. Smethurst ..	Mountain View	24

(Special prize of ½ dozen patent leg chains for highest scoring farm not winning a section prize, donated by Mr. Geo. Hayward.)

Zone.	Name of Competitor.	Association.	Points.
1	A. D. Ford ..	Kiewa Valley ..	796
2	H. W. Lester ..	Swanpool ..	759
3	G. Brown ..	North Murchison	808
4	R. G. Anderson ..	Rochester ..	829
5	F. Dennys ..	Paschendale ..	736
6	F. Johnson ..	Winchelsea ..	777
7	E. J. Pearce ..	Maffra ..	738
8	Thomas Bros. ..	Narracan Shire ..	705
9	R. Skinner ..	Fish Creek ..	839
10	F. Unthank and Son	Peninsula ..	782

Young stock on the property of Mr. J. Bullingham.

Anderson, Rochester, were similar to those obtained from Mr. Denny's poultry section. The pig returns should be appreciated more generally when they are around the proportion of 20 per cent. of the cream cheques, or at least when the equivalent of 2d. per lb. of the butter fat yield is being returned from the pig section.

The Large White is the most widely used breed of pig, with the Tamworth, Berkshire, and Middle Yorkshire in lesser demand. The Black Orpington (or Australorp) and the White Leghorn are the most popular breeds of fowls.

Herd Sires and Dairy Cows.

It matters not whether the milk is delivered as such to milk or cheese factories, or whether cream is sent to the butter factory, there is always the problem of securing a suitable dairy-sire and developing good dairy cows. In no other competition is so much importance attached to the herd sire; the allocation of the 110 possible points under this heading shows this very clearly. Ten points are given for registration, and up to 20 for breed type, masculinity, robustness, and conformation. A further 10 points are given for his progeny, on similar lines. Because it is believed that a bull is more likely to sire good producing daughters if he is bred of production ancestry, up to 20 points can be gained for the known average yields of his dam and both granddams. One point is scored for each 100 lb. of butter-fat in the average yield of the three best years. The possible 20 points could be gained by a bull whose three nearest female ancestors each averaged 670 lb. butter-fat. Over 30 bulls scored from 10 to 16 points in this section. An Equal Parent Index is made out for all sires having producing daughters from tested dams; the maximum points in this section being 40.

Ten points may be gained when the bull is securely controlled in a paddock, or pen, where feed, water, and shelter are easily obtained, and a service pen is provided. On all of the competing farms this section is well developed, in striking contrast to the "unrestrained libertine" so commonly seen on dairy farms. Such bulls are often a menace to good breeding and to public safety.

Messrs. A. D. Ford, J. and A. Crosthwaite of Zone 1, Dr. J. L. Henderson of Zone 2, Wm. Watson, Zone 5, Mrs. Scott, Zone 6, Messrs. B. J. Boardman, S. Ross, and E. J. Langford of Zone 7, Mrs. Hardie and McNeil Bros. of Zone 8, and G. Bright of Zone 9, all scored the possible 10 points for bull control.

Of the bulls inspected, all but six were fully registered. Two of the latter, viz., "Barney" owned by Mr. F. Johnson of Winchelsea, and "Billy Boy" owned by Mr. S. Ross, of Sale, possess the highest known Equal Parent Index in their respective zones; while Mr. G. J. Howell's unregistered bull would be famous in any company, for no less than fourteen of his daughters have exceeded 500 lb. of butter-fat.

Among the many registered bulls there were some that upheld the best traditions of their breed. Mr. J. Bullingham's Freisian bull "Eurobin King Banfield" has a number of daughters that have exceeded their dams' 425 lb. average yield by 53 lb. of butter-fat. Among the Jerseys, Messrs. J. D. Pierce's "Ballara Lassies' Masterpiece," H. E. Keele and Son's "Maiwand Noble Duke," P. Freestone's "Cobham of Belgonia," T. E. Bond's "Leven Brae Master," W. J. O'Brien's "Molloik of Banyule," G. Bright's "Soliel of Averley," W. T. Pratt's "Kirkhill Flashlight," Mrs. E. V. Hardies' "Latrobe Starjoy," J. B. Watson's "Jerseyholm Island King 2nd," and J. H. B. Morris' "Jerseyholm Island King 18th," have all left very beneficial results in their respective herds. This is evident when a comparison is made of the yields of their mates and daughters which have been milked under similar conditions of farm management.

The principle of bull indexing is now meeting with approval among herd-testing farmers. Mr. G. J. Howell's new bull, "Flower's Duke of Lyndale," was purchased on his index, while Mr. Hardie junior purchased "Latrobe Starjoy" after he had worked out his index, and found it to be good. The original breeder then wished to repurchase him on this account.

Highly Developed Herds.

Thirty seven of the herds inspected scored within three of the full score of points for conformation, uniformity, and condition. Mrs. J. M. Scott's registered and grade Jersey herd at St. Albans was awarded full points, as a recent application of the tuberculin test showed no reactors in a herd of 80 cows of various ages. Mrs. Scott's herd was the only one in the competition submitted to this test. The "Kanowna" Jersey herd of Mr. Wm. Horn of Leongatha, the herds of Messrs. J. B. Watson, Shepparton; G. Bright, Dumbalk; H.

1, Mr. E. V. Harley's dairy herd; 2, Mr. G. Bright's "Auntie", 480 lb. butter-fat; 3, "Goldmine", owned by Mr. W. L. Watson, Warrnambool; 4, Fodder conservation is an important feature in the competition; 5, A hollow concrete brick dairy on the farm of Messrs. H. E. Keele and Son; 6, Mr. E. Smethurst's "Lady", leading three-year-old heifer at Mountain View, 396 lb. butter-fat; 7, A good stand of rye-grass and clover at Mr. E. V. Harley's, Kardella.

E. Keele and Son, Bamawm; and E. Stableford, Deans Marsh, were each awarded 29 points; while Messrs. J. Bullingham, P. Freestone, S. Polmear, A. D. Ford, E. J. Parkhill, F. Unthank and Son, E. V. Harley, J. J. Wilson, A. T. James, Wm. Watson, Dr. Henderson, H. Lester, J. D. Pierce, R. G. Anderson, C. Shier, F. Johnson, and Mrs. A. V. Hardie, all received 28 points—a score that indicates a high degree of excellence in herd breeding and appearance.

Herd Improvement.

In the Herd Improvement section an effort is made to ascertain the real dairy character of the herd. Dairy herds are mainly divided into two sections, viz., mature cows and junior cows—the former usually represent the selections of many years. They are selected because they appear to have a natural resistance to herd troubles and are also good breeders. In rare instances, as at Messrs. Unthank and Sons, we find an aged cow like "Rose"—27 years, and still averaging 440 lb. of butter-fat annually. On the other hand, there appears to be over 40 per cent. of junior cows in our tested herds that are milking on their first or second calf.

By adding age allowances to the junior cow yields, and comparing them with those of the mature cows, we get a fair idea of whether the young cows are as good, better, or worse than

Four Leading Competitors in each Zone.

First Farm in each Zone receives a First Class Certificate from the Royal Agricultural Society, and a silver cup or trophy donated by the Stock and Land. Second Farm receives a Second Class Certificate.

ZONE 1.

Name of Competitor.	Association.	Score.
S. Polmear	Eskdale	816
S. J. Edwards	Kiewa Valley	814
E. J. Parkhill	Eskdale	803
A. D. Ford	Kiewa Valley	796
		3,229

ZONE 2.

Name of Competitor.	Association.	Score.
A. T. James	Swanpool	848
Dr. J. L. and E. I. Henderson	Milawa	841
W. J. O'Brien	Moyhu	771
H. W. Lester	Swanpool	759
		3,219

ZONE 3.

Name of Competitor.	Association.	Score.
J. Bullingham	Tongala	910
P. Freestone	Nth. Murchison	895
J. B. Watson	Nth Shepparton	845
V. R. Neilsen	Nth. Murchison	820
		3,470

ZONE 4.

Name of Competitor.	Association.	Score.
H. E. Keele and Son	Rochester	880
T. E. Bond	Cohuna	879
J. D. Pierce	Rochester	866
R. G. Anderson	Rochester	839
		3,464

ZONE 5.

Name of Competitor.	Association.	Score.
Wm. Watson	Warrnambool	766
H. Woodruff	Paschendale	759
F. Dennys	Paschendale	736
E. J. Murch	The Sisters	573
		2,834

ZONE 6.

Name of Competitor.	Association.	Score.
Hy. Parish	Winchelsea	781
F. Johnson	Winchelsea	777
E. Stableford	Winchelsea	755
J. H. B. Morris	Apollo Bay	753
		3,066

ZONE 7.

Name of Competitor.	Association.	Score.
B. J. Boardman	Yinnar	838
W. F. Treasure	Sale	829
S. A. Ross	Sale	815
E. W. Langford	Sale	767
		3,249

ZONE 8.

Name of Competitor.	Association.	Score.
L. Senini	Narracan	822
Mrs. A. V. Hardie	Warragul	786
H. Turner	Narracan	742
C. Dineen	Narracan	742
		3,092

ZONE 9.

Name of Competitor.	Association.	Score.
G. Bright	Dumbalk	852
R. Skinner	Fish Creek	839
J. G. Howell	Leongatha	820
J. J. Wilson	Toora–Welshpool	793
		3,304

ZONE 10.

Name of Competitor.	Association.	Score.
E. V. Harley	Korumburra	806
E. Smethurst	Mountain View	789
W. T. Pratt	Mountain View	783
F. Unthank and Son	Peninsula	782
		3,160

Shade, shelter, and a good water system are essential features which are not given sufficient thought on many dairy farms.

the mature section. The method is illustrated with Mr. J. Bullingham's splendid grade herd, which now has three top-crosses of Friesian breeding, over what was originally a Jersey-Shorthorn mixture, or nondescript class of dairy-cow.

Mature cows average 429 lb. = 5 + 12 points.
Junior cows average 498 lb. = 5 + 15 points.

Total .. .. 37 points.

Five points are allowed in each section for the first 200 lb. and 1 point for each additional 20 lb. of butter-fat. Mr. Bullingham's 37 points score was the highest in the competition. Messrs. J. J. Wilson and W. T. Pratt each scored 34 points, Messrs. G. J. Howell and A. T. James, 31 points, and Mr. G. Bright, 30 points. Messrs. Wm. Watson (grade Freisians) and F. Johnson had splendid figures also. Six herds scored sixteen points or less, while others were undoubtedly going down hill. In some instances, the owners had not realized this fact until the competition brought the matter to light.

Carrying Capacity.

On the champion farm a big bodied Freisian cow is maintained with farm-grown fodder on £50 of capital cost, the butter-fat average yield being 397 lb. from a herd of 40 cows, which included 24 juniors. The farm is not fully stocked. This is evident from the large amount of hay sold during the year. Mr. J. H. B. Morris' farm values were reviewed on this occasion, and in spite of a higher value, a dairy cow is still being maintained on £30 of capital cost, as was the case on Mr. Senini's highly productive farm at Yarragon, and at Mr. B. Boardman's hill-country farm at Jeeralang. Compared with these, five farms had a cost of over £100 per cow—the highest capital value being £150; these figures suggest an extravagant value per acre, or inefficient management.

Good farm management is reflected in fodder reserves and pasture development. Sometimes it may seem that excessive amounts of fodder are reserved, and it would appear that it would be better to have cashed some of it. On the other hand, better interest on the money thus represented may be earned should sales be made during an "outsize" drought. At least, twelve of the competitors were considered to be below the safety margin of 1 ton of hay per dairy cow, or its equivalent as silage or root crops.

Silage.

Messrs. F. Dennys of Paschendale, and W. Horn of Leongatha, are strong advocates of grass silage. Each used the part-trench, part-stack method. Mr. Denny had three pits—one of 90 tons is held in reserve—while two 70-ton trenches are used for the current year's needs. Mr. Horn also uses the trench system, to which a modified hill-side finish off is given. Messrs. Lester, Mansfield, and J. Crosthwaite, Kiewa, do likewise, over a hillside pit. The commoner method, making stack silage, is used on a large number of competing farms, with the exception of the irrigation areas, where very little is made.

Mr. Horn has approximately 250 tons of silage, and 30 tons of meadow hay. When ensiling, trenches are made across the face of the rising ground, the material being swept in from either end. As the material rises above ground level, the sweeps are skidded up wide stout planks, on to the ensiled mass. There is very little pitch-fork work. Mr. Denny also uses this method with complete success, except that two long poles are used for the skidding process. Mr. Horn finds it easier to sweep from above the trench when he is finishing off the stack section. He uses the earth taken out of the trench for a ramp to carry the sweeps on to the heap, in lieu of the planks.

Mr. Bullingham's wonderful pastures are well known. The extraordinary growth of grasses, lucerne, and clovers tell of a highly fertile soil, and good management. The owner modestly says that this result arises mainly from superphosphate and sound watering methods. He has used between 3 cwt. and 4 cwt. superphosphate per acre for a number of years past. Messrs. H. E. Keele and Son and W. J. O'Brien of Hansenville as usual gained high scores (97 points) for their pastures and lucerne. Each uses super. extensively, as do most of the leaders in the competition.

Messrs. L. Senini, Yarragon; W. F. Treasure, Sale; J. D. Pierce, Rochester; E. J. Parkhill, Eskdale; and J. B. Watson, P. Freestone, and V. R. Neilsen, all of Zone 3, scored 96 points, Mr. W. T. Pratt of Mountain View, and Wm. Horn of Leongatha, being one point lower. If allowance be made for some possible difference of values given by the various judges in their awards, it would be true to

1, Shade trees and permanent water on Mr. E. V. Harley's farm at Kardella; 2, A vigorous pasture consisting of perennial rye, red, alsike, and white clovers grown by Mr. G. J. Howell, Leongatha; 3, Pigs are well bred and well housed at Mr. J. J. Wilson's farm, Agnes; 4, Mr. W. Horn, Leongatha, using a tumbler sweep when making grass silage; 5, Cocking meadow hay on Mr. G. Bright's farm, Dumbalk; 6, Mr. P. Vagg's "Nigger", which yielded up to 70 lb. milk on thrice a day milking when grazing on pasture.

say that any score of 90 or more points represents a farm on which the average paddock growth is of a very high quality throughout, and reflects particularly good management.

Generally some modification of the grass mixture used by the early pioneers is still to be found in the intermediate and high rainfall areas, viz., perennial rye, cocksfoot, white, red, and alsyke clovers. A remarkable paddock of this mixture was inspected on Mr. J. G. Howell's farm at Leongatha. Generally too much Yorkshire fog was in evidence. A splendid illustration of pasture control was seen at Mr. Horn's farm, where fog was not in evidence in the paddock but had practically taken control in a new section of shelter trees, where the stock and mower could not operate.

Good pasture management, fodder reserves, herd building, and farm control are reflected in the final section of the competition. It was here that the Champion farm stood out, for when the farm value and the gross farm returns (less the costs for fertilizer, water, and concentrates) were considered, it was shown to gain 116 of the 120 points allotted. This section has previously been dominated by Mr. P. Freestone (Reserve Champion farm), and Mr. J. H. B. Morris of Apollo Bay. The following farmers all had scores of more than 70 points:—Messrs. G. Brown, P. Freestone, and R. Neilsen, all of Zone 3, S. Polmear and E. J. Parkhill of Zone 1, Dr. Henderson of Zone 2, T. E. Bond, F. E. Mathers of Zone 4, J. H. B. Morris, Zone 6, L. Senini, H. Turner of Zone 8, and R. Skinner and P. Vagg of Zone 9. The last-named competitor has, by dint of hard work, been able to build up his farm carrying capacity, a considerable area of maize and oats being sown annually to bring this about.

It is more than interesting to find Mr. S. Ross of Sale, and Mr. J. J. Wilson of Agnes, among the entrants in this year's competition. They can truly be classed as Herd Test pioneers—each was present as a delegate to the first conference of herd testing associations held at Stony Creek in the winter of 1923. At the time, only five associations had been organized, viz., Tarwin, Yinnar, Mirboo-Dumbalk, Toora-Welshpool, and Stony Creek.

In these seemingly far off days, herd testing was just beginning, top dressing pastures was a new practice, while silage and the making of meadow hay were very little developed. Concrete and steam boilers were little used, roaming bulls were common, and bull indexing work was unknown. Now these things are becoming general. A well developed knowledge of pasture improvement has been developed, and up to 4 cwt. of superphosphate per acre is used where none was applied previously. But perhaps the greatest feature of all is the more practical outlook that farmers have with regard to farm planning and herd building. These are the subjects that are seriously discussed at every field day, and wherever herd testing dairy farmers forgather, and the Dairy Farm Competition can claim a major part in the development of this work.

Irrigating Perennial Pastures

Pastures of rye-grass, cocksfoot, white clover, &c., do not take more water than lucerne, since to maintain both types of irrigated crop in full production, about 2 acre-feet (24 inches) of irrigation water has to be applied annually. Lucerne, however, on account of its deep rooting habit will withstand long periods of dryness, while the common pasture species will not.

Most farmers like to get their irrigation over as quickly as possible, and with this end in view, some use an almost unmanageable stream of water and pour it on to one or two sections. Except in porous soils, this method results in poor absorption, and only a week afterwards the pasture might show signs of requiring a further irrigation. In most of the irrigation districts the soils are not very permeable, and the use of such a method is uneconomical.

Experiments have shown that a watering of three or four inches is the most desirable. In rather impenetrable soils, however, this amount can be applied only by supplementary watering, which means the application of water again to the pasture one or two days after the initial application while the surface soil is still moist.

London Markets

Weekly Prices

The following information as to prices offering in London for the principal Victorian primary products has been taken from cablegrams received each week by the Department of Agriculture from the Victorian Agent-General in London.

Product.		Price for Week Ending—			
		28th January.	4th February.	11th February.	18th February.
		d.	*d.*	*d.*	*d.*
Lamb, 1st quality, Victorian	29–36 lb.	7⅛	7	6⅞	6¾
Lamb, 1st quality, Victorian	37–42 lb.	7⅛	7	6⅞	6¾
Lamb, 1st quality, other States	29–36 lb.	7	6⅞	6¾	6¾
Lamb, 1st quality, other States	37–42 lb.	7	6⅞	6¾	6¾
Lamb, 2nd quality, Victorian	28 lb. and under	6¾	6⅝	6⅝	6⅝
Lamb, 2nd quality, Victorian	29–36 lb.	6½	6½	6⅝	6⅝
Lamb, 2nd quality, other States	28 lb. and under	6⅝	6⅝	6½	6½
Lamb, 2nd quality, other States	29–36 lb.	6⅝	6⅜	6⅜	6⅜
Lamb, 3rd quality, all States	28 lb. and under	6¼	6¼	6¼	6¼
Lamb, 3rd quality, all States	29 lb. and over	6¼	6¼	6¼	6⅛
Mutton wethers and/or maiden ewes	Under 40 lb.	4⅝	4½	4½	4⅜
Mutton wethers and/or maiden ewes	41–48 lb.	4¼	4⅛	4⅛	4⅛
Mutton wethers and/or maiden ewes	49–56 lb.	4⅛	4	4	4
Mutton ewes	Under 40 lb.	4½	4⅜	4¼	4
Mutton ewes	41–48 lb.	4	4	3⅞	3¾
Beef, frozen ox hinds	145–210 lb.	4½	4½	4½	4½
Beef, frozen ox crops, weights corresponding		3⅜	3½	3½	3½
Beef, chilled ox hinds	145–210 lb.	5¾	5⅞	5½	5½
Beef, chilled ox crops, weights corresponding		3⅞	4	4	3⅞
Pork, Australian 1st quality	60–80 lb.	7⅝	7⅜	7¼	7¼
Pork, Australian 1st quality	81–100 lb.	7¼	7	6¾	6¾
Pork, New Zealand, 1st quality	60–80 lb.	7⅝	7⅜	7¼	7¼
Pork, New Zealand, 1st quality	81–100 lb.	7¼	7	6¾	6¾
		s.	*s.*	*s.*	*s.*
Bacon, Canadian	per cwt.	84	84	89	89
Bacon, Empire (cured in England)	per cwt.	83	83	86	86
Bacon, Danish	per cwt.	98	98	98	98
Butter, unsalted, choicest grade	per cwt.	108	110–111	114	114–115
Butter, unsalted, 1st grade	per cwt.	107	109	112	..
Butter, unsalted, 2nd grade	per cwt.	..	..	..	..
Butter, unsalted, pastry grade	per cwt.	..	..	..	..
Butter, salted, choicest grade	per cwt.	104–105	108–109	111	112–113
Butter, salted, 1st grade	per cwt.	103–104	107–108	110	112
Butter, salted, 2nd grade	per cwt.	102–103	106–107	109	111
Butter, salted, pastry grade	per cwt.	100–101	104	107	109
Butter, Danish	per cwt.	122	125	125	126
Market (butter)		Quiet after activity at middle of week	Firmer at close after heavy clearing earlier	Firm	Firm

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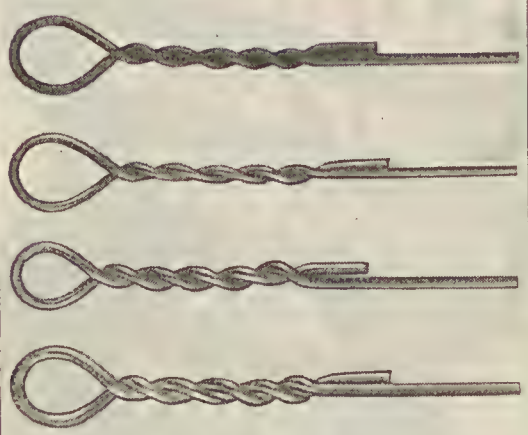

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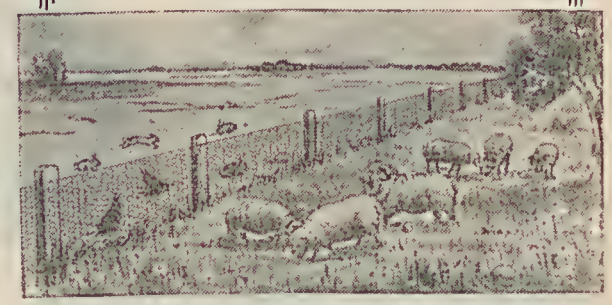

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Export Lamb Competitions

Executive Officer's Report

Loading Export Lamb for London.

IN a progress report to the Australian Meat Board, Mr. R. H. Heywood, the Board's executive officer in London, states that the first of the series of competitions conducted by the Board was completed with satisfactory results. Early in December the lambs were pitched into the shop of Messrs. Hayes and Paine, 32 Grand-avenue, Smithfield, during the morning for judging, and were on view, officially, from 12 noon till 1 p.m.

They were seen by a large number of those in the trade and by distinguished visitors, including the High Commissioner for Australia, the Agents-General for the States, representatives of the New Zealand Meat Producers' Board, the Argentine Meat Board, Corporation of Argentine Producers, the press and reporters of trade and other publications, including the *Pastoral Review*. The number of congratulatory messages which have been received has been surprising as well as gratifying.

To-day, Messrs. Selfridge, who purchased some of the lambs, are making a display in their noted establishment, and perhaps the best tribute I can pay to the producers, Mr. Heywood's report continues, is to say that, with the exception of a few pens which were obviously not up to the high standard set, their lambs sold, all in, at 5s. 8d. per stone, which equals the highest price this season.

Regarding the judging, which was done by Mr. J. I. Hamilton with whatever assistance this office could render, it was decided, prior to commencing, that no account should be taken of bloom (or of defects in dressing). This was in order that no competitor should be penalized in any way through some factor beyond his own control.

The scale of points, therefore, was as follows, and will be adhered to:—

	points.
A. Correct amount of fat and proportion of lean flesh to fat ..	50
B. Back and filling over loins ..	25
C. Depth and twist of meat on all four quarters	25
Total	100

The entry which gained the highest number of points was that of Mr. F. Prentice—Entry No. 1 (Class 1), Queensland. These were five well-balanced and finely proportioned lambs with a uniform and not excessive distribution of fat. They averaged 31 lb. in weight, and were described by the judge as "Five ideal lambs, full of meat with fine bone and no waste." (Southdown-Lincoln-Merino), Mr. Prentice's other entry—No. 2 (Class 1) Queensland, included three ideal carcasses, but the remaining two were fat and inclined to waste, one particularly so. This pen scored 12 points less than the other. It was also Southdown-Lincoln-Merino, and averaged 34 lb. per carcass.

Second on the list is Mr. B. D. Bothe's entry —No. 2 (Class 1) Western Australia (Southdown Border Leicester-Merino). This pen included four lambs which were well balanced and proportioned, but just a trifle weak in the loins and lacked depth of meat, while the fifth lacked a little on the hind legs. Accordingly the pen dropped two points compared with the leader. Average weight 31.60 lb.

Mr. Bothe's other entry (Class 1), No. 3 Western Australia, was not so uniformly good, being not so well proportioned and level, and was inclined to be wasteful. This pen dropped nine points compared with its fellow, but nevertheless, Mr. Bothe's aggregate for two pens is only one point behind Mr. Prentice's. This was also a Southdown Border Leicester-Merino cross, the average weight being 34.40 lb.

Third place at this stage is occupied by Mr. T. Ridgway's entry, No. 17 (Class 1) South Australia. This pen included five even, well-balanced and nicely proportioned lambs, but they were inclined to be a little weak in crutch and loins. Mr. Ridgway's second entry (No. 5) was a good pen of lambs, a trifle wasteful and included one carcass considerably below standard. Both were Southdown Border Leicester-Merino. Pen No. 17 averaged 32 lb. and pen No. 5, 35.2 lb.

Mr. Ridgway's aggregate for two pens is only six and five points, respectively, below the highest and second aggregates.

Here, it should be mentioned, the single entry from New South Wales, No. 2, Memsie Pastoral Company, scored the same number of points as Mr. T. Ridgway's best pen, with which it is equal, therefore, in third place for the highest number of points awarded for a single pen. This pen was a Southdown Romney Marsh-Merino cross, of which the judge remarked—"Five ideal lambs, delightfully proportioned, level back and loin, broad shoulders, but one carcass lacked finish and particularly on the leg." In fact, this pen was the only one to receive the possible number of points for conformation.

The single Victorian entry, Mr. W. E. Sargood's No. 1, a Southdown Romney and Border-Leicester-Merino cross, lacked distinction.

The single entry in the class for lambs sired by rams other than Southdowns, by Mr. W. C. Burges (No. 9)—Western Australia, was regarded as a good commercial type of lamb without having anything like the conformation or proportion of meat to bone as lambs in the Southdown class. The number of points awarded was no less than 28 below the leading pen in the other class.

A feature of the competition was the generally uniform and high standard of the numerous South Australian entries, which made the task of the judge a particularly difficult one. The four entries from Port Lincoln —Nos. 3, 2, and 1, and 4—by Messrs. E. H. Thorpe, T. R. Secker (two pens), and Cowling and Hughes, were all of a high standard of quality and separated by only four points in the order given.

Lett's Stud, Nos. 19 and 18, the Roseworthy College entries, Nos. 6 and 1, and Messrs. W. Fraser and Son, Nos. 16 and 21, all scored the same aggregate of points for two pens, and all over 80 out of a possible 100 for single pens. These were particularly attractive lambs, but in every case lost points for one or more weak carcasses, including one for being more or less wasteful.

The aggregate of Messrs. G. and E. A. Brookes' pens—Nos. 13 and 11—was only four points below the above, but in pen No. 11 the total of points for a single pen was slightly below 80.

...ion Lambs Displayed

Pens Nos. 22 and 20 (South Australia), entered by Sir J. L. Bonython and Mr. L. R. Cooper, respectively, were below the high standard of all other South Australian entries. No. 22 included five well-shaped lambs which were rather shallow in loin and crutch and lacked finish. No. 20 lacked finish similarly and included one very plain carcass.

The remaining West Australian entries—Nos. 1, 4, 5, and 8—by Messrs. W. G. Burges, Cox Brothers (4 and 5) and Topham, without exception were well-proportioned lambs, and closely approached the type of lamb in popular demand. They showed a minimum of waste, which is a recent feature of Western Australian lambs. As pens of show lambs, however, they lacked the even quality necessary to secure the highest award of points.

Generally, the standard of the competition was a high one and at least 70 per cent. of the entries might be regarded as the type of good cutting meat which is required in the trade. It was a great tribute to producers and demonstrates that the very best type of lamb can be produced in every State of the Commonwealth.

Later Results.

Advice has been received by cable that the judging of the October, 1937, entries in the above competitions resulted as follows:—

Class I.—Lambs Sired by Southdown Rams.

Total Number of Entries—29.

Placing.	Name of Entrant.	State.
1st	E. C. Henry ..	Berwick, Victoria
2nd (equal)	H. S. Henley	Cowra, New South Wales
	H. H. Shillabeer	Oakbank, South Australia
3rd	R. E. Golder ..	Kangarilla, South Australia

Class II.—Lambs Sired by Rams of Other British Breeds.

Total Number of Entries—3.

Placing.	Name of Entrant.	State.
1st	E. & B. Hawkins	Tocumwal, New South Wales

All-Australian Export Baconer and Porker Competitions

ENTRY forms in connexion with the second series of these competitions are required to be lodged with Works Managements on or before the 15th April next, and entries should be forwarded to Works in time for them to be treated and shipped so as to arrive in London for judging on 15th July.

Pig producers are reminded that such competitions provide important publicity for Australian pig meats in the United Kingdom, and that the reports of the judges on individual entries are a valuable index to the producers concerned of their achievement, and a guide to the type required in the United Kingdom market.

Each entry should comprise three pig carcasses, including heads, bred and fattened by the entrant.

Only one entry of each particular breed or cross will be allowed from each entrant. The sire of the entry must be pure bred and from a litter recorded by the Australian Stud Pig breeders' Society.

Weights for baconer carcasses should be not less than 120 lb. nor more than 160 lb. dressed, and including heads. Weights for porker carcasses should be not less than 60 lb. nor more than 90 lb. dressed, and including heads.

Prize money totalling £25 is awarded by the Board to successful entrants, and, in addition, a trophy valued at £10 10s. is competed for.

No entry fee is charged.

Entry forms are obtainable from the usual trade channels, also on application to the Veterinary Officers of the Department of Commerce in each State, and from the office of the Board at 419 Collins-street, Melbourne, C.1.

Kyneton Farm Competition

Report of the Judge, J. E. Harrison, B.Agr.Sc.

IN keeping with the spirit of progress which marks the agricultural communities of this State, the Kyneton Agricultural Society, at the instance of Dr. Clive Shields, M.L.A., has instituted a farm competition to encourage farm improvement in its district. Healthy competition is stimulating, and leads to increased endeavour; and in making the competition so wide as to cover stock, pastures and crops, farm management, farm equipment, and homestead, the Society gave all a chance to score well in those departments of their farms in which they have special ability and take special pride. Every farm inspected had at least one feature which was of more than ordinary merit, and revealed the special liking and aptitude of its owner.

The competition, which was conducted in two sections—one for farms of 140 acres and less and one for farms of between 140 and 450 acres—was open to owners of properties situated within 14 miles of Kyneton and 3 miles of the following post offices:—Baynton, Glenhope, Mia Mia, and Redesdale. The small number of entries was undoubtedly due to the adverse season, and a larger number may confidently be expected in a more favorable season. The first prize in each section was a trophy donated by Dr. Shields.

The rainfall in Central Victoria last season was much below that in most districts with the same average of about 30 inches annually. By the end of November only 16.7 in. of rain had fallen at Kyneton and, as will be seen from the following table, with an unfavorable distribution for the growth of pastures:—

—	Average Rainfall.	Rainfall, 1937.
	Inches.	Inches.
Summer—January and February ..	2·8	4·57
Autumn—March, April, and May ..	6·84	3·00
Winter—June, July, and August ..	10·06	4·79
Spring—September, October, and November	7·65	4·33

Relatively heavy rains fell in summer, with little benefit to the pastures, which usually contain, in addition to perennial rye-grass,

Buildings on the property of Mr. H. Don, winner of the "140 acres or less" section. 1. Dairy and wash-up room at entrance to cow-yard; 2. Showing cow bails and pitched yard; 3. Fodder reserves.

a high proportion of annual species which are dormant at that period. A dry autumn followed, with 3.8 in. less rain than average, which restricted the normal growth of pastures during those months. About half the average rain fell during winter, and somewhat more than half during spring.

These unfavorable conditions affected all pastures adversely and were reflected in the development of stock, especially among lambs, which suffered from the poor flow of milk from their ewes. It looked incongruous to see ewes mainly in fat condition running with unthrifty lambs, though it should be pointed out that the lambs had been picked over and all marketable ones sent away, before the time of judging.

Kyneton pastures, i.e., improved pastures, are dominantly perennial rye-grass, with an admixture of annual grasses like silver grass and goose grass, and of annual clovers like subterranean, cluster, and suckling. Perennial rye-grass alone gave some response to the summer rains, but was severely checked, in its two chief growing periods, by the low rainfall of both autumn and spring. At the same time it received severe punishment from grazing stock, which were pressed to find sufficient food for their needs, and kept the rye-grass closely cropped throughout the year. The low rainfall and hard grazing at both growing periods effectively suppressed the rye-grass for the season, and at the time of inspection the plants were small and bore a few spindly seed stalks only, in marked contrast to their usual luxuriance in the late spring.

The annual species had an equally severe experience. Most Kyneton soils are fairly strong and require good rains to moisten them sufficiently for the germination of small seeds. These rains did not fall until May, and were followed almost immediately by very cold weather, which effectively inhibited any further growth until the spring. At this period they made some recovery, but never grew away from stock or got ahead sufficiently to raise the pastures to the level of luxuriance which is usual in spring; and, apparently because of exhaustion from hard grazing and a lack of moisture in the sub-soil, neither the annual species nor the rye-grass made any vigorous response to rain when it did fall.

A very dry November terminated the life history of most annual species, with a small setting of seed, often shrivelled, and left the perennial rye-grass with few reserves for the future. The powers of recovery of perennial rye-grass are very strong however, and it will undoubtedly be completely restored, as well as the annual species, if favorable rains fall this season.

If a general critical observation is to be made of the pasture outlook of Kyneton farmers, it must be said, from a knowledge of the district as well as from an inspection of competing farms, that their present objective of a good stand of perennial rye-grass as the most satisfactory pasture to be had, would appear to fall short of what is actually obtainable. Kyneton is rightly proud of its perennial rye-grass, which is harvested for seed and is proving highly adapted to other Victorian districts, but a pasture dominated by rye-grass has limitations in time of growth and in nutritive value, which may be modified if clovers are present and contribute freely to the production of herbage.

It is often maintained, with some truth, that subterranean clover does not grow well at Kyneton, but as it is to be found here and there on all types of soil, except the very heavy black soils, throughout the district, its cultivation could probably be made much more general than it is. One difficulty probably lies in the competition offered by perennial rye-grass itself to the growth of clover, and which might be overcome by making lighter seedings of perennial rye than are now usual.

Perennial rye-grass also makes relatively small response to superphosphate and, as a result, top-dressing has not become the regular practice around Kyneton that it has elsewhere, where the grass has not taken so strong a hold. There are farmers who apply superphosphate regularly every autumn to all improved pastures, but the practice is far from general, and this is advanced as another reason for the very modified opinion in which subterranean clover is held.

In most districts it is necessary to apply superphosphate three years in succession after the introduction of subterranean clover before a typical sward is obtained, and it is doubtful whether the species is generally given the same chance around Kyneton. These remarks do not apply in all cases, and least of all to farmers on lighter soils to the north of Kyneton, where top-dressing is becoming a regular practice.

Views on the property of Mr. R. F. Sanderson, who gained first place in the section for farms from 140 to 450 acres. 1 and 6, Cutting and raking rye-grass for hay; 2, Chicken sheds; 3, A strong growth of perennial rye-grass and clover; 4, Cowshed and dairy; 5, A large poultry shed with accommodation for 1,000 birds.

Crops.

In spite of dry conditions, cereal crops had grown very well and some excellent stands were seen on several farms. District farmers are more than usually competent in the cultivation of the soil and the sowing of crops, and their work is reflected in the cleanliness, growth and uniformity of their oats and wheat.

Cropping is usually on a relatively small scale, in conformity with the general policy of mixed farming, and gives rise to a difficulty with wheat in the occurrence of ball smut. It is quite practicable to pickle seed wheat on a small scale and the treatment should not be omitted.

Ball smut gives hay an offensive smell, and besides causing horses to neglect their feed, may cause certain digestive troubles if they are forced through hunger to eat it. The variety of wheat commonly sown is Turvey, and, as the seed is grown locally, it would seem practicable for seed growers to dry pickle the seed before sale. On the other hand, the resourceful farmer will find little difficulty in pickling 10 to 20 bushels, either wet or dry, in any suitable makeshift container.

The dry season brought home to several farmers weaknesses in their water supply. Most had plans for remedying their positions and others had actually done some necessary

work in this direction. As the subdivision of a property should be based on the supply of water and its position, the work already undertaken and the plans, if fulfilled, should ultimately lead to further desirable improvement.

There is a general recognition of the value of shelter in the district, and on almost all farms there were small groups of pines or other trees coming on. On several properties gorse hedges line many fences and provide very good windbreaks, but give no shade in summer, and in these cases it would seem desirable to plant trees for this purpose. In addition to their usefulness, hedges and trees lend beauty and attractiveness to a farm which can be got in no other way.

The Awards.

In the first section, for farms of 140 acres or under, highest points were awarded to Mr. H. Don, whose dairy farm scored well in nearly all sections. The dairy herd comprised 32 Red Poll milkers, pure breds and grades, of fair to good class and uniformity and in fair to good condition. There were two Red Poll bulls, of good type, docile, and in good condition. The horses made a useful farm team; a small pen of pigs were in nice condition; and fowls and chickens looked well bred, clean and healthy.

Pastures were fair on some light country and could be improved by regular top-dressing; but were stronger and better on some heavy land where, however, a few fields have still to be adequately developed, probably into rye-grass-strawberry clover pastures.

On the light land, there were fair crops of oats and wheat, but the latter contained ball smut. On the heavy land there was a very good crop of oats; and fair small crops of barley, potatoes and maize, considering the unfavorable season.

Subdivision was good, but there was room for improvement in both shelter and water supply; and because of the demands of a milking herd in a lean year, fodder reserves were low. The buildings were well arranged, clean and orderly; machinery was in fair con-

RESULTS OF KYNETON FARM COMPETITION, DECEMBER, 1937.

Name.	Quality and Condition of.				Pastures and Crops.			Management.				Farm Equipment.			Homestead.			Total.
	Sheep and/or Cattle.	Horses.	Pigs.	Poultry.	Pastures.	Cereal and other Crops.	Cultivated Land.	Subdivision.	Shelter.	Water Supply.	Fodder Reserves.	Buildings.	Machinery and Improvements.	Fences and Gates.	House.	Garden.	Shelter.	
Possible Points ..	**50**	**15**	**10**	**5**	**50**	**15**	**10**	**25**	**15**	**15**	**15**	**20**	**15**	**15**	**10**	**10**	**5**	**300**
FARMS OF 140 ACRES OR UNDER.																		
Don, H.	38	8	3	5	30	10	..	20	9	9	3	16	9	11	8	5	4	188
Bowyer, F.	30	13	3	5	27	11	..	21	8	8	8	12	9	12	7	7	5	186
Green, O. C.	40	8	5	1	38	3	..	23	10	7	6	10	8	10	7	4	3	183
McCarthy, A. J. ..	30	10	3	4	20	..	..	20	8	12	7	14	13	11	10	4	3	169
FARMS FROM 140–450 ACRES.																		
Sanderson, R. F. ..	42	10	..	5	30	5	2	18	11	12	6	17	10	10	5	5	5	193
Bloomfield, R. ...	36	10	3	4	22	8	..	17	8	10	5	17	10	10	10	7	4	181
Olive, E.	38	10	..	3	30	5	..	18	7	6	10	14	9	9	8	6	4	177
Rollinson, S.	34	11	2	3	25	11	..	16	8	8	3	15	9	9	7	7	4	172
Hodge, I. H. ..	44	9	..	..	30	..	..	16	8	8	..	16	10	9	7	5	3	165

dition and fences and gates were good. A nice garden and good shelter surrounded an attractive cottage. Except for a few points, in which Mr. Don can see definite lines of improvement in the future, his farm is a good one, well worked and well managed.

Mr. F. Bowyer scored consistently well in all sections, with special merit for fine crops of oats and wheat, which were clean and heavy; and for a delightful garden and fine shelter for his neat home. His first-cross ewes had been mated with a Border Leicester ram, and a good drop obtained but, owing to the season, the lambs were not doing well.

The cows were an average lot, in good condition. His draught horses made an excellent team, and three young draughts (twelve months old) looked active, quiet and well cared for. Pastures were fair only and offer much scope for advantageous improvement, which Mr. Bowyer has already begun in a few fields.

Mr. O. C. Green had a particularly nice herd of Jersey grades, all good milking types in good condition; and two fine breeding sows, one with a litter of nine. All buildings were in good order, but the bails were open to the west and the dairy was too far away for convenience. His pastures were amongst the most improved that were seen, and his farm had good shelter. Fodder reserves had run low and only a small crop was being grown. Mr. Green's farm is small and good, and he was unfortunate to lose points in the few important directions indicated above.

Mr. A. J. McCarthy's farm is in an early developmental stage as a pasture farm, but he has good soil to work on for the most part, the land is very well watered by natural streams, and the farm should develop into a very attractive one. The house was new and a nice garden had been laid out. The cow bails were well built and concreted, while other buildings were in fair condition. Machinery and equipment were very good; and saddlery and harness were well oiled and pliable—not a feature on every farm inspected.

In the second section, for farms of 140 to 450 acres Mr. R. F. Sanderson gained first place, with a well-stocked farm, with very good buildings and good pastures and subdivision. The Southdown stud of ewes and rams looked uniform and in good condition, many of them high-class sheep. The farm flock consisted mainly of big-framed Romney Marsh ewes and a few Corriedales, with their lambs, which, however, had made little headway owing to the dry season.

Cutting a 3-ton crop of Sunrise oats on the farm of Mr. O. C. Green.

The dairy herd consisted of Guernsey cattle, mostly pure bred, and though mainly good type, were somewhat light in condition. Of special interest, in view of its novelty in the district, was the poultry flock, which consisted of 1,300 White Leghorns, all well housed, clean, and healthy. Mr. Sanderson has this department of his farm highly organized and working on a profitable basis. All records are complete in detail, and Mr. Sanderson is able to show for this, as for every section of his farm, a system of book-keeping in which every item of receipt and expenditure is entered.

Two unusual crops for the district occurred on this property; one was lucerne, which was sown on high, well-drained land, and was giving satisfactory yields of hay: and the other was a pasture of *Phalaris tuberosa,* which had struck well and had given, Mr. Sanderson said, very good winter feed.

Many pastures on this property are improved, while other fields are under natural pasture. It is the practice to top-dress 120 acres for two years in succession, when another 120 acres is treated—a rather limited programme on responsive country. Subdivision is good; shelter and water supply are somewhat weak and could be improved. The whole farm is good country, capable of intense development, and Mr. Sanderson bids fair to make the property an attractive farm and home as time goes on.

Mr. R. Bloomfield has a fine home, with excellent shelter and a well laid out garden. The farm buildings are all very good, including stables, blacksmith's shop, bails and sheep yards, &c., and are well arranged and kept clean and orderly. The sheep, though mixed sorts, were in good condition and coming on well for market. The dairy herd consisted of

some pure Guernseys and some Jersey and Guernsey grades; the horses were fairly good; a line of young pigs were below good condition; while the poultry comprised a useful lot of Black Orpington fowls.

The pastures were on the light side and capable of systematic improvement. A crop of oats and a field of rape both looked well. Though the farm was well sheltered in parts, it was exposed in others and could be improved in this direction. It is a good property and should develop well when Mr. Bloomfield is able to bring all his plans to fruition.

Mr. E. Olive, one of the leading rye-grass seed growers of the district, was having a disappointing season, and most of the fields closed for seed had failed to finish on. Many of the pastures are improved, and others are still under natural grass and capable of development. The dry year had revealed a weakness in the water supply, which Mr. Olive was taking steps to remedy at the time of inspection—a bore had been put down, a windmill erected, and pipe lines were being run to troughs in several paddocks.

The sheep were a fine roomy lot of cross-bred Corriedale ewes, and looked in very good condition—too good, as Mr. Olive remarked, as they had done better than the lambs during the season. There was a greater reserve of fodder on this farm than on any other in the competition.

Mr. S. Rollinson scored fairly evenly in all sections, with high marks for his crops, in which he is skilled in cultivation methods. His oat crop, though on the light side, was particularly clean and uniform. The sheep comprised rather a mixed lot, as did the dairy cattle and other stock, but were in nice condition. The horses made a very good team. The pastures were light, and as there is some good country capable of ready development on the farm, improvement should be quickly secured in this direction.

Mr. I. Hodges had very good pastures on the homestead block, but an adjacent paddock, which comprised part of the farm, was under natural pasture, and was insufficiently subdivided. A small flock of Border Leicesters made a fine stud, and the farm flock of cross-bred English Leicester ewes were unusually uniform and in good condition. As Mr. Hodges had no entries in five sub-sections, his total score was low, but in all other respects his farm reached a satisfactory standard. Amongst his horses was a fine thoroughbred mare.

Mr. R. Bloomfield was awarded second place in the section for farms 140 to 450 acres. 1, Fattened two-tooth wethers; 2, Dairy: 3, A young plantation; 4, Some of Mr. Bloomfield's milkers.

Victorian Wheat Varieties

Advisory Committee's Recommendations

Replicated Wheat Variety Trials.

THE Victorian Wheat Advisory Committee, comprising representatives of various organizations concerned with the wheat and flour industries, met at the Department of Agriculture, Melbourne, on Thursday 24th February, 1938, to receive a report from the Department on "The Progress made in the Improvement of Yield and Quality of Victorian Wheat." The representatives appointed for the meeting were :—

Victorian Mill Owners' Association—Mr. J. Gatehouse.

Chamber of Commerce (Wheat Merchants)—Mr. W. L. Osbourne.

Victorian Wheatgrowers' Corporation—Mr. R. Tilt.

Melbourne and Suburban Master Bakers' Association—Mr. J. Doyle.

The Provincial and Country Master Bakers' Association—Mr. C. H. Jeffrey.

Wheat Growers (Victorian Wheatgrowers' Association)—Messrs. H. L. Simpson, G. G. Marshman, and H. M. Dowd.

Department of Agriculture—

- The Director of Agriculture (Chairman)—Mr. H. A. Mullett.
- The Agricultural Superintendent—Mr. J. Brake.
- The Agricultural Research Chemist—Mr. W. R. Jewell.
- The Senior Inspector of Agriculture—Mr. W. B. Miller.

After discussing the Report, the Committee adopted the following resolutions :—

1. The Committee approves of the adoption of the report re the varieties to be sown in different districts and the recommendations contained therein — the millers, merchants and bakers' representatives registering their objection to the inclusion of Free Gallipoli for recommendation to any district.

2. The representatives of wheatgrowers merchants, millers, and bakers place on record their appreciation of the efforts of the Department of Agriculture and the Departmental Officers in achieving such an advance in improving the quality of Victorian wheat.

3. It is in the interests of the wheat industry generally that any organization or grower desirous of obtaining new varieties of wheat for seed from other States should submit their request naming the variety to the Department who on behalf of the Wheat Advisory Committee will advise on the suitability or otherwise of the introduction of such wheat.

4. With the object of reducing the proportion of unmillable grain and foreign matter, this Committee recommends that machinery manufacturers should give increased attention to the prevention of grain cracking and to the elimination of foreign matter from the sample, and growers when harvesting their wheat should pay special attention to these aspects.

The report is appended :—

During the past three years there has been considerable improvement in the standard of Victorian wheat in regard to both yield and quality. These facts are indicated in the following table showing the average wheat yield per acre obtained for the past eight years, and in the condensed table of analytical data covering the F.A.Q. sample of wheat over the past six years, grouped in three-yearly periods :—

YIELD TABLE—VICTORIA.

Year.	Yield per Acre.
	Bushels.
1930–31	11·70
1931–32	11·77
1932–33	14·81
1933–34	13·96
1934–35	10·51
1935–36	16·16
1936–37	17·90
1937–38 (Estimated)	17·0

F.A.Q. WHEAT SAMPLE AND FLOUR MILLED THEREFROM.

	Average Three Years (1932–33 to 1934–35).	Average Three Years (1935–36 to 1937–38).
Wheat—		
Impurities (screenings)—Percentage	7·4	4·9
Protein (N x 5·7)—Percentage	9·94	10·21
Bushel weight—lb. ..	60⅝	63
Pelshenke Figure—mins. ..	24	26
Flour—		
Protein (N x 5·7)—Percentage	8·73	9·35
Wet Gluten—Percentage ..	24·1	28·1
Dry Gluten—Percentage ..	8·2	9·1

The analyses of F.A.Q. samples indicate a definite improvement over the past three years in bushel weight, total impurities and screenings, and protein quantity and quality, i.e., in general milling and baking quality. Reports from the milling and baking trade support this contention.

Reasons for Improvement.

In regard to both yield per acre and general quality, the principal causal factors for the improvement were primarily better seasonal conditions, and secondly a change in the varieties sown. In contrast to the years 1933–34 and 1934–35, when weather conditions at harvest time adversely affected grain quality, the grain generally has been little damaged in the past three years by rain in the harvest period, although in 1936–37 some bleaching took place.

The change in the varieties sown has contributed materially to the improved quality and to the improved average yield per acre obtained during the past few seasons, culminating in a record State yield of 17.9 bushels per acre for 1936–37 and estimated yields approaching a record for the Wimmera district in 1937–38.

The area sown to Free Gallipoli has been markedly reduced, the varieties replacing it being Ghurka principally, Ranee 4H to a lesser extent and, in 1937, Dundee. The table below shows the percentage sown to the leading varieties in Victoria in 1930-31, 1933–34 and 1936–37.

The detailed sowings for 1936–37 by districts are shown in Tables I., III., V., and VII.

The relative increase in area of Ghurka and Ranee 4H is as anticipated by the Department at

WHEAT VARIETIES SOWN IN VICTORIA—PERCENTAGE OF TOTAL WHEAT AREA.

1930–31.	Percentage of Total Wheat Area.	1933–34.	Percentage of Total Wheat Area.	1936–37.	Percentage of Total Wheat Area.
Free Gallipoli ..	34·5	Free Gallipoli ..	49·0	Ghurka	45·2
Federation	13·9	Ranee*	20·0	Ranee*	22·3
Ranee*	13·1	Sepoy	5·4	Free Gallipoli ..	14·7
Sepoy	5·7	Ghurka	5·2	Sepoy	3·2
Major	4·7	Nabawa	3·9	Dundee	2·8
Currawa	4·4	Federation	2·2	Nabawa	1·5
Penny	3·7	Major	2·1	Rajah	1·5
Nizam	3·2	Rajah	2·0	Bencubbin	1·2
Joffre	2·0	Nizam	1·5	Major	0·9
Nabawa	1·8	Waratah	1·2	Bobin	0·7

* Including Ranee 4H.

NOTE.—Statistics relating to wheat areas were supplied by the Victorian Government Statist. 1937–38 figures are not yet available, but it is estimated that Dundee occupied from 8 to 10 per cent. of the area.

the meeting of the Wheat Advisory Committee in 1935, when the following resolution was passed :—

> "The Conference is of the opinion that a material improvement in the quality of Victorian wheat can be effected by larger sowings of Ghurka throughout the State, and Ranee 4H in the Mallee. At the same time intensive work should be continued with the object of producing varieties combining still better quality without material sacrifice in yield."

Possibilities of Further Improvement.

It is considered that further steady and material progress can and will be made in the improvement of the Victorian wheat yield per acre and the general quality standard of wheat and flour, and that improved varieties will contribute largely to this objective. Intensive work by the departmental Plant Breeders, Field Staff and Chemists has been continued, and it is anticipated that new wheats, superior to those now grown, will be evolved for each of the principal districts, and also that special types for specific purposes will be produced.

Yield Trials.

Replicated tests with a large number of varieties and new crossbreds and selections have been conducted in the main districts, the principal results of which are given in Tables II., IV., VI., and VIII. The tables do not include the results of many varieties now discarded in favour of those shown.

Although experiments at more centres are desirable, the figures submitted are very comprehensive, and, together with the experience of officers in their contacts with growers, form the basis of the departmental recommendations as to the yielding capacity of the varieties tested.

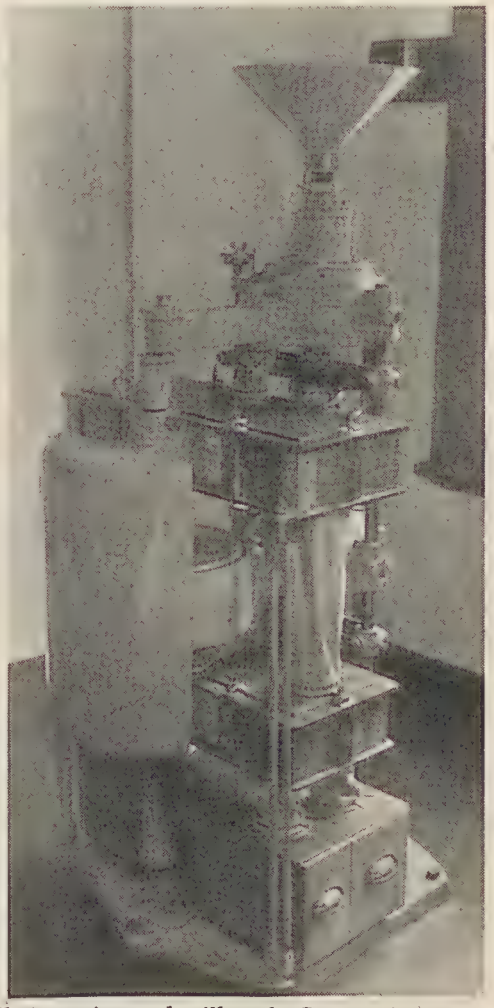
Quality Investigations.

Since the last meeting of the Wheat Advisory Committee, new milling and baking rooms have been provided by the Department in the State Laboratories. In these have been installed new equipment, the funds for which were made available conjointly by the Department of Agriculture and by the various organizations represented on this Committee. It is now apparent that these extra facilities will enable a much larger amount of work to be conducted more expeditiously and accurately.

The programme of work has included the following major items :—

(*a*) A critical examination of the nine most commonly grown varieties, samples being obtained from replicated experimental plots at four main centres. This project has extended over the past four years, and can now be considered as completed. From these data it has been possible to classify these varieties in each centre as regards their baking qualities.

(*b*) An investigation of the milling and baking qualities of newly-introduced wheats, and of crossbreds and selections which have shown promise as regards yield. Samples have been examined from the four main centres as in (*a*) above, and from a number of other centres where experimental plots have been established. Some results of this work are referred to later in this Report.



The experimental mill at the State Laboratories.

Varieties are classified, according to the flour quality strengths of their grain, as either medium strong, low, or very low strength.

(*c*) A study of the effect of season and environment on quality is nearing completion. Seed from one centre has been grown at other centres, and the product subsequently returned to the original centre and re-grown.

(*d*) A number of small specific problems have been investigated.

Full reports on the foregoing are now being compiled.

VARIETIES RECOMMENDED.

From a consideration of the results of the above-mentioned varietal experiments in regard to yielding capacity, and both milling and baking quality, and from the general knowledge existing in regard to the field characteristics of each variety, the Department of Agriculture recommends the varieties discussed below to be sown in the districts enumerated.

Mallee.

Ghurka and Ranee 4H have been the principal varieties recommended and grown in the Mallee in recent years, while smaller areas have been sown with Free Gallipoli, Sepoy and Rajah. Ranee 4H is sown chiefly in the northern Mallee, while Ghurka is more popular further south.

Work over the past three years has demonstrated the possibilities in the Mallee of Baldmin, Bencubbin, and the new crossbred Ranee x Free Gallipoli, W5807–J5–1–1. At the Mallee Research Station, Walpeup, the superiority of Baldmin and Bencubbin has been marked, while at Swan Hill and Werrimull they yielded as well as the standard varieties.

The crossbred 5807 has given high yields at each of the Mallee experimental centres and, as it is the best of the very early maturing types and definitely superior to Rajah in straw characteristics, it should be tried on bulk areas, particularly in the northern Mallee.

Milling and baking tests indicate that, as far as quality is concerned, Baldmin regularly produces medium strong flour, Bencubbin is superior to both Ranee 4H and Ghurka as a low strength wheat, while the grain quality characteristics of the crossbred 5807 closely resemble those of Ranee 4H, are superior to those of Ghurka, and very superior to those of Rajah.

TABLE I.—TEN PRINCIPAL VARIETIES SOWN IN THE **MALLEE** 1936–37—PERCENTAGE OF TOTAL WHEAT AREA.—(1935–36 FIGURES IN BRACKETS).

Variety.	Percentage.
Ghurka	36·2 (24·9)
Ranee (including 4H) ..	32·3 (31·6)
Free Gallipoli	11·2 (20·3)
Sepoy	6·2 (7·8)
Rajah	2·7 (2·6)
Nabawa	2·6 (3·9)
Bencubbin	1·6 (0·3)
Bobin	1·1 (0·7)
Mac's White	1·1 (1·1)
Waratah	0·6 (1·1)
All other	4·4 (5·7)
Total wheat area	1,142,942 acres

TABLE II.—RESULTS OF EXPERIMENTS WITH PRINCIPAL WHEAT VARIETIES IN THE MALLEE

Yields in Bushels per Acre.

	Mallee Research Station—Walpeup.			Swan Hill.		Werrimull.		Carwarp.	Rainbow.		Manangatang.
	Average, 12 Years, 1925–37.	Average, 5 Years, 1933–37.	Average, 3 Years, 1935–37.	Average, 7 Years, 1931–37.	Average, 3 Years, 1935–37.	Average, 6 Years, 1932–37.	Average, 2 Years, 1936–37.	Average, 8 Years, 1923–31.	Average, 8 Years, 1929–36.	Average, 2 Years, 1935–36.	Average, 5 Years, 1926–31.
Ranee 4H	*23·4*	27·8	31·2	25·6	29·1	*20·1*	*21·5*	*14·2*	*21·7*	*27·4*	*12·1*
Ghurka	22·0	23·7	23·7	*26·8*	28·2	*20·2*	18·3	*14·8*	*23·9*	*29·8*	*11·9*
Ranee x Free Gallipoli, 5807 ..	..	*28·8*	31·7	..	29·2	..	*23·1*	..	..	*30·0*	..
Baldmin	..	..	*34·9*	..	28·0	..	*21·2*	..	..	..	..
Bencubbin	..	*29·5*	*33·6*	..	29·4	..	20·4	..	..	25·6	..
Rajah	*23·2*	*28·7*	*32·1*	25·7	*31·3*	19·3	21·0	14·1	..	..	*12·7*
Dundee	..	..	29·4	..	26·6	..	19·2	..	..	..	..
Sepoy	*23·3*	26·0	27·7	*27·4*	*31·2*	*20·1*	20·2	*15·1*	..	..	11·4
Free Gallipoli	22·1	25·3	26·7	*27·0*	*30·0*	18·8	18·4	13·8	*21·5*	26·3	10·8

NOTE.—Three leading varieties in *italics*. Ranee 4H replaced Ranee from 1928 onwards.

The Departmental Committee strongly recommends that the crossbred Ranee x Free Gallipoli W5807–J5–1–1 be named and recommended for limited sowings as an early variety, and in substitution for Rajah, no further seed of which will be sold from the State Farms.

The seasons in each of the past three years have been characterized by a dry period early in the spring, followed by good late spring rains. Consideration of the frequency of such seasons in the Mallee shows that approximately only one-third conform to this type. In view of this, the Department considers it unwise for farmers to depart substantially from the former recommendations, and sowings of Baldmin and Bencubbin should be restricted to limited areas until more evidence is available as to their behaviour under Mallee conditions. Both exhibit a tendency to weakness in the straw.

In the southern Mallee districts bordering on the Wimmera, Dundee, a medium strong wheat, is worthy of trial on limited areas, while Free Gallipoli is still recommended as the most profitable of the older varieties to grow where Ghurka or Ranee 4H are regarded as comparatively unsuitable for specific conditions.

The varieties recommended for the Mallee are :—

—	Main Sowing.	Limited Sowing.
Northern Mallee	Ranee 4H Ghurka	Ranee x Free Gallipoli 5807 Baldmin Bencubbin Sepoy
Southern Mallee	Ghurka Ranee 4H	Baldmin Dundee Ranee x Free Gallipoli 5807 Free Gallipoli

Wimmera.

Ghurka is now the principal variety in the Wimmera, its general adoption in place of Free Gallipoli having resulted in an improvement both in yield per acre and quality. This short-strawed variety is recommended for the main sowings on (1) black land, and (2) red and mixed land.

In recent years, the medium strong wheat Baldmin has given good yields in the Wimmera experimental plots at Longerenong, Salisbury, and Donald, having been superior to Free Gallipoli, and about equal in yield to Ghurka. The use of Baldmin would result in a further improvement in the quality of Wimmera wheat, but, until it has proved itself over a somewhat longer period, it is recommended for limited sowings only. It has a tendency to weak straw.

Dundee, another medium strong variety (but inferior to Baldmin in grain and flour quality) has been tried by many Wimmera growers in the past two years with good results in some cases, but only moderate in others. Departmental tests to date do not indicate that it is the equal of Ghurka in yield on black land. As yet, the tests are incomplete, and, in the meantime, the use of Dundee is not recommended for that type of soil.

On red ground, Dundee has given better results during the short period of the tests, and if it maintains its satisfactory yield, it will receive the Departmental approval. In the meantime, limited sowings only are recommended.

The earlier maturing variety Ranee 4H has also proved comparatively unsuitable for black land in the Wimmera, but is recommended second to Ghurka for red land.

Nizam, another short-strawed wheat, and of comparatively low quality, has yielded well, but is not considered as suitable as Ghurka for extensive sowing. Free Gallipoli is recommended only where a strong-strawed variety of medium height is required for black and mixed land.

TABLE III.—TEN PRINCIPAL VARIETIES SOWN IN THE **WIMMERA**, 1936–37—PERCENTAGE OF TOTAL WHEAT AREA (1935–36 FIGURES IN BRACKETS).

Variety.	Percentage.
Ghurka	60·0 (52·9)
Free Gallipoli	18·4 (28·7)
Ranee (including 4H) ..	10·6 (9·9)
Dundee	4·0 (0·4)
Federation	1·0 (1·7)
Nizam	1·0 (1·4)
Bencubbin	1·0 (0·2)
Bobin	0·5 (0·1)
Rajah	0·5 (0·6)
Baringa	0·5 (0·1)
All other	2·5 (4·0)
Total wheat area	772,382 acres

The varieties recommended for the Wimmera are :—

—	Main Sowing.	Limited Sowing.
Wimmera black land ..	Ghurka	Free Gallipoli Baldmin Nizam
Wimmera red and mixed land	Ghurka	Ranee 4H Free Gallipoli Nizam Dundee Baldmin

TABLE IV.—RESULTS OF EXPERIMENTS WITH PRINCIPAL WHEAT VARIETIES AND CROSSBREDS IN THE WIMMERA.

Yields in Bushels Per Acre.

	Sallsbury. (Black Land.)			Longerenong. (Black Land.)		Donald. (Red Land.)		
	Average 6 Years, 1931–36.	Average 3 Years, 1935–37.	Average 2 Years, 1936–37.	Average 10 Years, 1928–37.	Average 2 Years, 1936–37.	Average 4 Years, 1934–37.	Average 2 Years, 1936–37.	1 Year, 1937.
Major x Free Gallipoli 5817	..	*49·5*	*53·2*	..	53·7	..	..	*41·3*
Ghurka	*41·6*	*47·4*	*51·2*	*43·1*	49·7	*34·6*	38·5	36·4
Baldmin	..	*46·3*	48·7	..	52·0	..	..	36·8
Nizam	..	..	..	*42·4*	49·4	*35·3*	*40·7*	37·4
Free Gallipoli	*38·4*	45·7	49·0	*41·7*	48·8	*34·5*	*39·8*	35·1
Dundee	..	43·9	47·2	..	48·4	..	*42·1*	41·2
Ranee 4H	*35·5*	..	..	..	..	32·9	38·1	34·5
Wannon	..	..	..	40·4	48·4	..	..	..
Federation	..	..	..	39·1	45·6	..	..	..
Baringa	..	..	..	..	44·0	..	..	..
Nizam x Free Gallipoli 5774, R2–2–1	..	..	..	..	*57·1*	..	..	..
Ranee x Free Gallipoli 5899, J1–1–2	..	..	49·9	..	*54·2*	..	..	39·4
Rajah x Gallipoli	..	..	*54·6*	..	50·8	..	..	38·8
Ghurka x Currawa x Major x Gallipoli 5543, P4–2L1	..	..	..	..	*55·2*	..	..	..
Ghurka x Currawa x Major x Gallipoli 5530, P2–2–2	..	..	..	..	..	..	..	*41·8*
Major x Ranee 6025	..	..	..	..	53·8	..	..	*47·1*
Free Gallipoli x Sepoy 5053	..	43·9	47·5	..	45·8	..	..	..

Note.—Three leading varieties in italics.

Northern District.

A feature of recent tests in the Northern District has been the high yields given by the medium strong wheat, Baldmin (see Table VI.). At Dookie and Numurkah it has outyielded Ghurka, Ranee 4H, and Free Gallipoli, and similar results have been obtained by a number of farmers who have grown this wheat commercially. Recent seasons appear to have suited Baldmin, and have lifted its plot yield to the extent that its average at Dookie for eight years exceeds that of Ghurka by one bushel per acre, and at Numurkah by four bushels per acre during the past four seasons. There is now sufficient evidence to entitle it to be recommended for general sowing in the eastern half of the Northern District, though some caution should be exercised in situations likely to produce rank growth.

Ghurka and Ranee 4H have proved themselves the most reliable varieties of the other standard wheats, Ghurka being particularly useful because of its resistance to flag smut and partial resistance to rust. Dundee has been grown successfully by many farmers in the Northern District in the past two years, and in experiments at Numurkah and Dookie has yielded slightly higher than Ghurka and Free Gallipoli. These tests are not of sufficient duration to warrant the use of this variety for main sowing, and as yet, it is recommended for limited sowing only.

With the above four wheats available, it is now considered desirable to omit Free Gallipoli from the recommended wheats for this district.

TABLE V.—TEN PRINCIPAL VARIETIES SOWN IN THE **NORTHERN** DISTRICT 1936–37—PERCENTAGE OF TOTAL WHEAT AREA (1935–36 FIGURES IN BRACKETS).

Variety.	Percentage.
Ghurka	45·8 (35·6)
Ranee (including 4H)	20·7 (21·1)
Free Gallipoli	15·7 (28·4)
Dundee	7·1 (0·7)
Major	1·7 (2·8)
Nabawa	1·0 (1·8)
Bencubbin	1·0 (0·3)
Sepoy	1·0 (1·9)
Baringa	0·6 (0·1)
Rajah	0·5 (0·7)
All other	4·9 (6·6)
Total wheat area	449,801 acres

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C.2.

The varieties recommended for the Northern District are :—

Main Sowing—
Ghurka,
Baldmin (Eastern section only),
Ranee 4H.

Limited Sowing—
Dundee.

Western, Central, North Central, and North Eastern Districts.

The following are the departmental recommendations for the Western, Central, North Central, and North-Eastern districts, which together contribute about 8 per cent. of the Victorian wheat crop :—

—	Main Sowing.	Limited Sowing.
Western	Ghurka	Free Gallipoli
Central and North Central	Ghurka Mogul ..	Ranee 4H Major Free Gallipoli
North-Eastern	Ghurka Baldmin	Dundee Free Gallipoli Major

SUMMARY.

The departmental varietal recommendations for the different districts discussed above, together with comments on each of the varieties recommended, are set out in Table IX. A list of varieties tested and now not recommended in any district is also given, together with some of those named varieties under test in addition to those included in the recommendations.

Statistics showing the principal varieties sown in all States of the Commonwealth in 1936–37 are also submitted (Table No. X.).

A comparison of the varieties now recommended for Victoria with those advocated three years ago indicates an improved position as far as quality is concerned. The inclusion of two varieties—Baldmin and Dundee—known to be of medium strength, and the replacement of Free Gallipoli by varieties of higher quality, must result in a general all round improvement in the quality of the wheat of this State.

Main Victorian Wheats.

The varieties recommended for the main sowing in one or more of the principal districts are :—

Ghurka.—Main Victorian variety; midseason maturity; very prolific, particularly on clean, strong land in good seasons. Resistant to flag

TABLE VI.—RESULTS OF EXPERIMENTS WITH PRINCIPAL WHEAT VARIETIES AND CROSSBREDS IN THE NORTHERN DISTRICT.

Yields in Bushels Per Acre.

—	Dookie.		Numurkah.				Shepparton.
			Invergordon.			Waala.	
	Average 8 Years, 1928–37.	Average 2 Years, 1936–37.	Average 4 Years, 1934–37.	Average 2 Years, 1936–37.	1 Year, 1937.	Average 3 Years, 1931–33.	Average 4 Years, 1930–33.
Baldmin	*39·9*	*48·4*	*40·7*	*39·0*	*33·4*	..	..
Major x Ranee 6025	..	*48·0*	..	..	*32·2*	..	..
Major x Free Gallipoli 5817	..	*48·0*	..	..	*30·4*	..	..
Ghurka	*39·0*	38·8	*36·5*	32·6	28·4	*21·2*	*24·9*
Ranee 4H	33·6	38·0	*35·9*	*33·4*	27·9	*22·0*	*23·3*
Dundee	..	42·4	...	*33·8*	28·8	..	..
Free Gallipoli	35·8	41·6	34·2	32·3	26·9	17·7	*22·2*
Major	*36·7*	43·8	..	..	..	17·5	18·8
Joffre	*36·7*	39·9	..	..	..	..	..
Bencubbin	..	41·4	..	..	..	..	..
Baringa	..	39·4	..	..	..	..	..
Ranee (old strain)	..	33·8	..	..	..	..	..
Nizam	..	..	..	..	..	*19·5*	20·3
Federation	..	..	..	..	..	18·0	19·5
Nabawa	..	..	..	..	..	17·9	16·2
Ranee x Free Gallipoli 5899, J5–1–1	..	44·2	..	..	31·0	..	..
Rajah x Gallipoli	..	42·4	..	..	..	..	..
Free Gallipoli x Sepoy	..	41·2	..	..	..	..	..

Note.—Three leading varieties in *italics*.

Preliminary tests with crossbred wheats.

smut disease, and slightly resistant to rust. Stands well, and threshes freely. Produces average sized grain, seldom mottled, with low-strength baking quality flour. Its main weakness is that its straw is too short under some conditions.

Recommended for all districts.

Ranee 4H.—Second wheat in the State, and standard variety in northern Mallee. Matures earlier than Ghurka, and yields well in all seasons in Mallee. Slightly weak in straw, but threshes freely. Produces larger grain than Ghurka of uniformly bright colour, and flour strength high in the low-strength class. As with most early varieties, the straw is not very strong, and the grain sometimes sheds.

Recommended for main sowing in northern and southern Mallee and Northern districts, and limited sowing in Wimmera (red and mixed land).

TABLE VII.—TEN PRINCIPAL VARIETIES SOWN IN THE WESTERN, CENTRAL, NORTH-CENTRAL, AND NORTH-EASTERN DISTRICTS, 1936–37—PERCENTAGE OF TOTAL WHEAT AREA.

(1935–36 *Figures in Brackets.*)

Variety.	Western. (28,880 acres.)	Central. (24,512 acres.)	North-Central. (20,973 acres.)	North-Eastern. (23,143 acres.)
	%	%	%	%
Free Gallipoli ..	38·7 (56·1)	3·9 (8·8)	19.8 (35·8)	31·8 (37·9)
Ghurka	22·3 (12·2)	32·0 (15·5)	31.9 (15·3)	24·8 (16·6)
Ranee (incl. 4H) ..	13·1 (5·9)	3·2 (1·3)	4.4 (5·2)	3·1 (2·6)
Turvey	9·5 (9·2)	8·1 (7·9)	18.8 (16·5)	..
Major	6·5 (8·0)	20·5 (22·9)	3.1 (3·0)	10·2 (13·0)
Federation	3·1 (1·4)	..	2.5 (9·1)	..
Warden	1·6 (2·0)	21·0 (30·4)	10.6 (7·7)	..
Sepoy	1·3 (0·9)	1·2 (1·0)	..	..
Bena	0·7 (1·6)	..	..	1·6 (1·6)
Nizam	0·6 (0·7)	..	..	..
Mogul	..	7·2 (6·4)	..	..
Currawa	..	0·5 (0·9)	..	..
Nabawa	..	0·3 (2·2)	3·1 (2·5)	2·1 (3·8)
Waratah	..	..	1·0 (0·8)	12·5 (11·6)
Dundee	..	..	..	2·9 (0·9)
Bobin	..	..	..	2·1 (1·9)
Ford	..	..	..	1·4 (1·6)
Blue Stem	..	..	1·7 (0·5)	..
All other	2·6 (2·0)	2·1 (2·7)	3·1 (3·6)	7·5 (8·5)

TABLE VIII.—RESULTS OF EXPERIMENTS WITH PRINCIPAL WHEAT VARIETIES IN THE WESTERN, CENTRAL AND NORTH-EAST DISTRICTS.

Yields in Bushels per Acre.

	Western.	Central.	North-east. Rutherglen.	
	Willaura, Average, 7 Years.	Werribee, Average, 11 Years.	Average, 5 Years	1937.
Ghurka ..	*33·4*	23·7	*25·4*	26·4
Mogul	..	*25·5*	..	..
Ranee 4H ..	..	*24·8*	..	28·1
Free Gallipoli ..	*32·5*	22·9	*21·6*	27·2
Dundee ..	..	..	..	*32·8*
Baldmin ..	..	..	..	31·3
Major	30·5	22·1	*21·7*	26·8
Free Gallipoli x Sepoy ..	..	..	..	*32·6*
Major x Ranee 6025	..	..	..	*32·2*
Major x Free Gallipoli, 5817 ..	..	..	..	30·9
Nizam	*30·8*	..	..	..
Sepoy	30·0	*23·8*	..	..
Rajah	..	23·4	..	..
Turvey	..	..	20·4	29·4
Waratah ..	..	..	..	28·5
Federation ..	30·4	20·4	..	..

NOTE.—Three leading varieties in *italics*.

Typical heads of Ghurka.

TABLE IX.—WHEAT VARIETIES RECOMMENDED FOR VARIOUS DISTRICTS IN VICTORIA.

District.	Varieties Recommended for Grain.	
	Main Sowing.	Limited Sowing.
Mallee (Northern) ..	Ranee 4H Ghurka	Ranee x Free Gallipoli 5807 Baldmin Bencubbin Sepoy
Mallee (Southern) ..	Ghurka .. Ranee 4H	Baldmin Dundee Ranee x Free Gallipoli 5807 Free Gallipoli
Wimmera (black land)	Ghurka ..	Free Gallipoli Baldmin Nizam
Wimmera (red and mixed land)	Ghurka ..	Ranee 4H Free Gallipoli Nizam Dundee Baldmin
Northern	Ghurka .. Baldmin Ranee 4H	Dundee
Western	Ghurka ..	Free Gallipoli
Central and North-Central	Ghurka .. Mogul	Ranee 4H Major Free Gallipoli
North-East ..	Ghurka .. Baldmin	Dundee Free Gallipoli Major

Varieties Tested and not now recommended.—Federation, Currawa, Nabawa, Bobin, Waratah, Mac's White, Baringa, Bena, Bald Early, Gluyas, Penny, Joffre, Ford, Yandilla King, Dollar, Carrabin, Wannon Rajah.

Other Varieties under Test include.—Sword, Geeralying, Gular, Totadgin, Gluclub, Merredin, Noongaar, and many new crossbreds.

Hay Wheats.—Northern, Western, Central, North-Central, and North-East—Warden, Wardfir, Turvey.

Mallee and Wimmera—Bencubbin (dual purpose type).

Baldmin.—An early-maturing, tall-growing variety, the most recent strain of which has yielded particularly well in experimental plots and on larger areas in the Goulburn Valley, and also at the Mallee Research Station. It usually produces large, vitreous grain, and flour of "medium-strong" quality. Its main weakness is that the tall straw is inclined to go down, but this should not result in loss if harvested promptly.

Baldmin is now recommended for the first time for main sowing in the Northern and North-Eastern districts, and for limited sowing in the Wimmera and Mallee.

The varieties recommended for limited sowings, for various reasons, are:—

Dundee.—Introduced from New South Wales as a prolific wheat, producing medium-strong flour, Dundee has been tried widely in Victoria during the past two seasons with fairly satisfactory results. In experimental plots, it has yielded well at Dookie, Numurkah, Donald, and Rutherglen, but not so well on the black Wimmera soils and in the northern Mallee. Under Victorian conditions its grain and flour quality has been irregular, the grain often being mottled, and flour strength not always in the medium-strong class. It is fairly resistant to flag smut, and has straw of average strength. Further trials are required with this wheat, but sufficient evidence is to hand for it to be recommended for limited sowings in the Northern and North-Eastern districts, the southern Mallee, and the red soils of the Wimmera.

Free Gallipoli.—This wheat is now superseded by less tough and better quality varieties in most districts, though in 1936 it still occupied approximately 15 per cent. of the Victorian wheat acreage. It produces a strong and moderately tall straw, and is a prolific yielder in the Wimmera and southern Mallee.

Nizam.—This short-strawed variety has yielded well in experiments at Longerenong and Donald, and is recommended for limited sowings in the Wimmera. It produces average sized grain of low strength, slightly inferior to Ghurka in quality.

Bencubbin.—The leading wheat in Western Australia, Bencubbin has given heavy yields at the Mallee Research Station during the past five years. It is a tall, early-maturing wheat, and under some conditions it is definitely weak in the straw. It produces large grain, giving flour high in the low-strength class. It is resistant to flag smut, and is considered the most suitable dual purpose (grain and hay) type for the Mallee. It is recommended for limited sowing in the northern Mallee.

Sepoy.—A late maturing variety, Sepoy has yielded particularly well in Mallee trials in seasons characterized by late spring rains, of which type there has been an abnormal number in recent years. It produces flour of fair quality, inferior to Ranee 4H, but slightly superior to Ghurka. It forms large, angular grain which, however, is often pinched and very unattractive. Sepoy is recommended for limited areas only in the northern Mallee.

Mogul.—A tall strawed variety, producing large grain of low-strength quality, Mogul has yielded best at the State Research Farm, Werribee, and is recommended (with Ghurka) for main sowings in the Central district.

Major.—Formerly popular as a dual purpose (grain and hay) variety in the wetter districts of the State, Major is regarded as inferior in grain yielding ability to Ghurka and Free Gallipoli. It is a white-chaffed type, and is still recommended for limited sowing as a dual purpose variety in the Central, North Central, and North-Eastern districts. In grain quality it is classified as a low-strength wheat.

NEW CROSSBRED WHEATS.

Of the many new crossbreds and selections under test by the Department, the following five have been the most successful, and have shown themselves to be at least equal to, and in some cases superior to, the standard varieties in one or more of their characteristics. These five new wheats have shown sufficient promise to date, to indicate that it is possible to improve further the standard of the wheat crop in yield and quality. One of these crossbreds (namely, Ranee x Free Gallipoli 5807) has been under trial for a sufficiently long period to warrant its immediate release, and the others will be subjected to further tests before being recommended for distribution.

Ranee x Free Gallipoli 5807 J5–1–1.

The crossbred, Ranee x Free Gallipoli 5807 J5–1–1, is a very early maturing variety, especially bred for Mallee conditions. It has yielded particularly well at the Mallee Research Station, Walpeup, at Werrimull, and at Rainbow, and is superior in flour quality to Rajah, Free Gallipoli, and Ghurka, and is about equal to Ranee 4H.

Wheat Breeders at Work.

It is a brown-chaffed wheat, of medium height, with good straw characteristics, and it holds its grain better than Rajah and other very early wheats. It is considered that this crossbred could readily meet the demand for a very early wheat in the Mallee and, as stated previously, it is recommended for immediate release for sowing in that district. Three hundred bags of seed are available from the Mallee Research Station.

Ghurka Selection W595-0-5.

This improved selection of Ghurka (W595-0-5) is definitely superior in grain and flour quality compared with the strain so commonly grown; also, it has a taller straw and increased resistance to flag smut disease. Its yielding ability has yet to be proved, but preliminary trials indicate that it is at least equal and possibly superior to the existing strain.

In view of the importance of Ghurka at the present time, it is considered that this Ghurka selection is the most valuable of the new wheats.

Major x Free Gallipoli W5817.

The new Major x Free Gallipoli crossbred has been tested in the replicated plots of the Wimmera at Salisbury for three years, Longerenong two years, and Donald one year (see Table IV.). In each year and in each centre it has out yielded Ghurka, the average increase in yield per acre being 2.1 bushels at Salisbury, 4 bushels at Longerenong, and 4.9 bushels at Donald.

In appearance its grain is satisfactory and milled well on the experimental mill. Baking tests indicate that its flour is somewhat better than Free Gallipoli, but usually inferior to Ghurka, and definitely inferior to Ranee 4H. The variety is a white chaffed wheat, late maturing, with medium height, strong straw, and possessed of good harvesting features. Further yield tests and quality investigations will be conducted.

Major x Ranee W 6025.

The results of yield tests with the crossbred Major x Ranee W 6025 in the past two years indicate that it has outstanding yielding ability; see Tables IV. and VI. In baking quality it is superior to Free Gallipoli, but not equal to Ghurka. Further tests will be conducted.

Free Gallipoli x Sepoy L 5053 B 2.

In regard to quality, the Free Gallipoli x Sepoy L 5053 B 2 crossbred is definitely superior to any of the above, and is classed as a medium

TABLE X.—WHEAT ACREAGE AND PERCENTAGE OF TOTAL AREA SOWN WITH EACH OF THE TEN MAIN VARIETIES IN EACH STATE, 1936–37.

Victoria.

Variety.	Area (Acres).	Percentage of Total Area.
Ghurka	1,113,780	45·2
Rance (including 4H) ..	550,301	22·3
Free Gallipoli	363,530	14·7
Sepoy	79,027	3·2
Dundee	69,523	2·8
Nabawa	37,380	1·5
Rajah	37,331	1·5
Bencubbin	30,439	1·2
Major	21,165	0·9
Bobin	17,998	0·7
Other Varieties	146,190	6·0
Total	2,466,664	100

New South Wales.

Variety.	Area (Acres).	Percentage of Total Area.
Ford	890,959	20·9
Nabawa	879,688	20·7
Dundee	524,237	12·3
Baringa	287,474	6·7
Waratah	280,410	6·6
Bobin	173,651	4·1
Rance	173,214	4·1
Yandilla King	103,267	2·4
Bencubbin	102,977	2·4
Ghurka	75,692	1·8
Other Varieties	765,923	18·0
Total	4,257,492	100

South Australia.

Variety.	Area. (Acres).	Percentage of Total Area.
Rance	746,442	22·6
Nabawa	514,498	15·5
Sword	390,941	11·8
Waratah	179,167	5·4
Gluyas	177,711	5·4
Ford	170,673	5·2
Ghurka	98,689	3·0
Gallipoli	98,562	3·0
Late Gluyas	78,699	2·4
Bencubbin	76,208	2·3
Other Varieties	776,099	23·4
Total	3,307,689	100

Western Australia.

Variety.	Area (Acres).	Percentage of Total Area.
Bencubbin	891,374	32·0
Gluclub	334,745	12·0
Merredin	274,257	9·8
Gluyas Early	231,918	8·3
Totadgin	195,174	7·0
Nabawa	176,483	6·3
Noongaar	158,396	5·7
Waratah	87,529	3·1
Ford	57,441	2·1
Geeralying	46,157	1·6
Other Varieties	337,768	12·1
Total	2,791,242	100

Queensland.

Variety.	Area (Acres).	Percentage of Total Area.
Florence	71,903	20·5
Flora	41,160	11·8
Pusa	37,624	10·8
Three Seas	32,157	9·2
Gluyas	24,654	7·0
Cedric	19,727	5·7
Seafoam	18,229	5·2
Clarendon	17,191	4·9
Ford	16,346	4·7
Currawa	11,426	3·3
Other Varieties	59,348	16·9
Total	349,765	100

strong wheat, superior to Dundee. In yield tests, it has been slightly inferior to Ghurka and Free Gallipoli in most districts, but further trials are necessary before this inferiority in yielding ability over a period of years can be estimated. It appears to be a "premium" wheat. This crossbred definitely illustrates the possibilities of plant breeding in the improvement of quality in crosses made between low strength but prolific varieties.

Recent Matings.

The most promising of the more recent crossbreds are at present undergoing trials in small test plots. These comprise seventeen families of a Ghurka x Canadian White Fife mating which were selected for superior grain quality. Two of these families have so far proved themselves equal in yielding capacity to Ghurka and Free Gallipoli in 1937, while they are definitely superior in grain quality. Further efforts are being made to improve and combine yield and quality, and many of the thousands of crossbreds and selections appear to hold promise of ultimate value.

Victorian F.A.Q. Wheat

Analysis of 1938 Sample

By W. R. Jewell, M.Sc., Agricultural Research Chemist.

IT is already well known that the bushel weight of this season's f.a.q. wheat sample has been struck at 63½ lb., which is as high as it has been for many years past. What is perhaps more important is that the general quality of the wheat is also of a relatively high standard, being better than that of any sample for at least the past ten years. This statement is based on the results of the usual examination, analysis, and milling and baking tests conducted on portion of the official sample. Particular points of interest will be discussed when considering the data set out later. The sample is very bright and plump, and has a generally pleasing appearance.

Wheat.

Analytical results on the wheat itself are given in Table I,, those for some years past being included for comparison.

The moisture content is relatively low, but normal, for Victorian wheat. Screenings may be described as "unmillable grain," and include broken grain and grain less than 2 mms., in addition to some husk, backbone, and weed seeds; the percentage is normal. Protein content is considerably higher than the average Victorian f.a.q. wheat, and is higher than in any year since 1928. This is a particularly pleasing feature of this season's wheat, which ensures a reasonable gluten content in flour milled from it.

The Pelshenke figure, which is one indication of gluten quality, is higher than usual, and indicates that not only quantity but also quality of protein has improved. This is also confirmed by the "farinogram" of the flour, which shows a slight improvement on last year's sample, when this test was first introduced.

Flour.

The wheat milled easily on the experimental flour mill with a particularly good yield of flour with a relatively low ash content. Analytical data on the flour are given in Table II.:—

TABLE I.—ANALYTICAL RESULTS—WHEAT

—	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.
Moisture (per cent.)	11·43	9·31	10·59	10·89	11·84	12·2	12·70	11·8
Impurities (screenings) (per cent.)	3·5	6·7	8·7	4·8	8·6	4·9	4·5	5·3
Ash (per cent.)	1·47	1·41	1·39	1·36	1·61	1·41	1·34	1·30
Protein (N x 5·7) (per cent.)	10·97	9·66	9·35	9·53	10·93	9·74	9·80	11·09
Bushel weight (lb.)	58½	62¾	62	60	60	63½	62	63½
Pelshenke figure (mins.)	..	..	..	24	24	26	24	28

TABLE II.—ANALYTICAL RESULTS—FLOUR.

—	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.
Yield (per cent.)	73 4	72·8	73·2	72·8	71·7	73·6	71·3	73·8
Ash (per cent.)	0·54	0·56	0·49	0·51	0·56	0·48	0·50	0·48
Protein (N x 5·7) (per cent.)	9·58	8·65	8·02	8·79	9·39	9·00	9·12	9·92
Wet gluten (per cent.)	28·4	26·1	22·4	23·1	26·8	27·4	26·4	30·4
Dry gluten (per cent.)	9·7	8·7	7·6	7·9	9·1	9·1	8·4	9·9
Water absorption (per cent.)	50·6	50·6	50·6	50·6	50·6	50·0	50·25	50·6
Maltose figure	..	..	141	195	84	159	142	152

The high figures, compared with previous years, for protein and glutens in the flour should be noted. The diastatic capacity, as measured by "maltose figure," is normal for Victorian wheat in a dry harvesting season, but is lower than is desirable to ensure adequate gassing power. This is confirmed by baking tests, which show that a slight improvement in baking quality is obtained by the addition of ½ per cent. of malt flour, and a very marked improvement by the further addition of 0.1 per cent. of ammonium phosphate, another form of yeast food. The further addition of potassium bromate actually decreased loaf volume, indicating that the general type of mineral improvers would not be expected to give successful results with much of this year's flour.

Loaf volumes in these experimental baking tests may be of interest, particularly as a guide to the use of improvers, and are given below. The marked superiority in quality of this season's flour is further proved by the decided increase in loaf volume compared with last year.

Baking Tests (100 grm. Flour).

Procedure.	Loaf Volume (c.c.).	
	1937.	1938.
Basic	395	450
Basic + malt	412	460
Basic + malt + phosphate	440	510
Basic + malt + phosphate + bromate	385	490

Generally speaking, the 1938 f.a.q. wheat sample is the most satisfactory for the past ten years, showing a decided improvement in bushel weight, flour yield, protein, and glutens, and in general baking quality. It should appeal to the trade both locally and overseas.

Butter Production and Export

The following table shows :—

(*a*) Factory production of butter and cheese in Victoria for the period July to December, 1937, compared with the corresponding period of 1936; and

(*b*) Quantities and percentages of various grades of bulk butter examined in Victoria for export from 1st July, 1937, to 29th January, 1938, in comparison with the corresponding period of 1936–37.

Factory Production of Butter and Cheese in Victoria (Quantities in Tons).

Month.	Butter.		Cheese.	
	1937.	1936.	1937.	1936.
July to October	20,715	21,346	2,392	1,889
November	9,549*	9,142	1,080*	819
December	8,172*	8,860	982*	709
Totals, 6 months	38,436*	39,348	4,454*	3,417

* Subject to Revision.

Bulk Butter Examined in Victoria for Export (Quantities in Tons).

Period.	1937–38.					Period.	1936–37.				
	How Graded—				Total.		How Graded—				Total.
	Ch.	1st.	2nd.	Pty.			Ch.	1st.	2nd.	Pty.	
1st July to 25th December ..	15,484	6,026	1,106	63	22,679	1st July to 26th December ..	16,249	5,484	1,348	155	23,236
26th December to 29th January ..	2,954	1,874	431	16	5,275	27th December to 30th January ..	5,466	1,265	506	112	7,349
Totals 1st July to 29th January ..	18,438	7,900	1,537	79	27,954	Totals 1st July to 30th January ..	21,715	6,749	1,854	267	30,585
Percentages ..	66·0	28·2	5·5	0·3	..	Percentages ..	71·0	22·1	6·0	0·9	..

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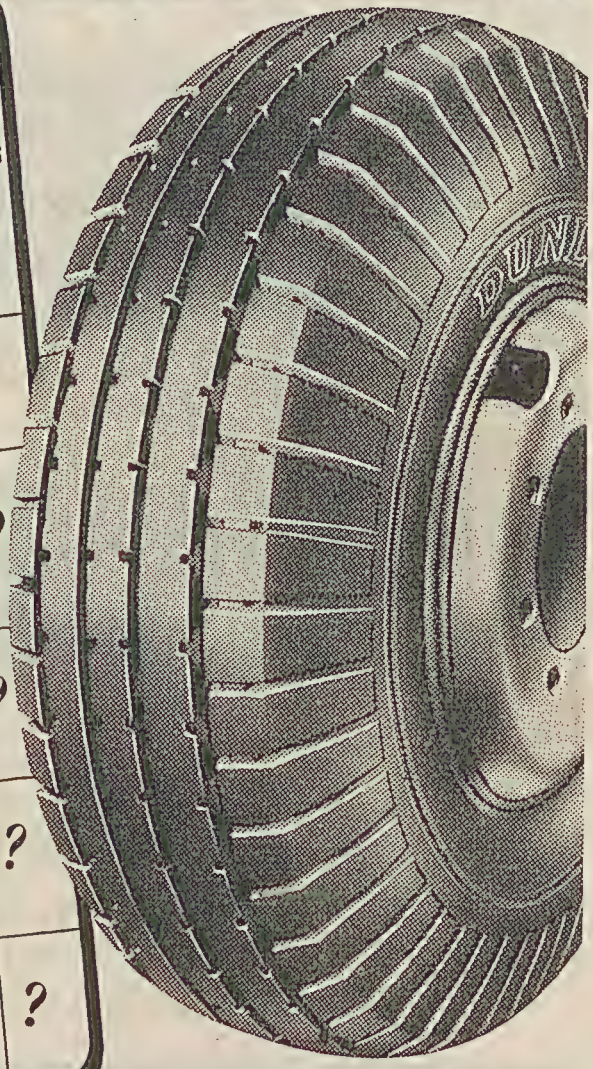

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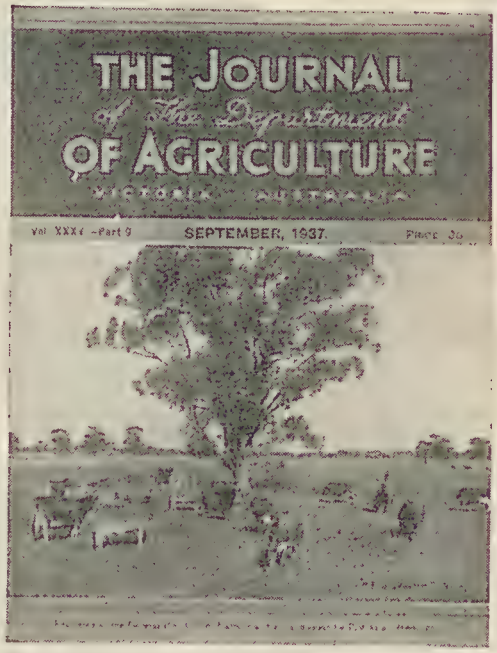

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By A. W. Jessep, M.Agr.Sc., B.Sc., Dip. Ed. Principal, School of Horticulture, Burnley

The Flower Garden.

THE year is passing from Summer to Autumn and the night dews are assisting the plants to withstand the relatively dry conditions. There may be more hot days and to prolong the flowering period of the summer plants they should be judiciously watered and faded flowers removed. The hot summer has suited petunias, phlox, and zinnias, and they have given a blaze of colour to the gardens.

Provision must now be made for the spring display. Sow seeds of pansies, stocks, calendulas, antirrhinums, carnations, and primula malacoides and prepare the ground for the planting next month of such bulbous plants as the ranunculus, anemone, daffodil, and hyacinth.

Sweet Peas.

Now also is the time to be getting ready for sowing winter varieties of sweet peas. The sweet pea was introduced into England from Sicily in about 1800. It immediately became popular, and within 20 years a large number of blooms of very distinctive colours was produced. During the present century it has become more popular than ever, and flowers can be seen of almost every shade. The stems have been increased in length; the number of flowers per stem is usually four.

With a little care sweet peas may be grown in most temperate areas. Almost any class of soil is suitable as long as it has a plentiful supply of lime and organic matter.

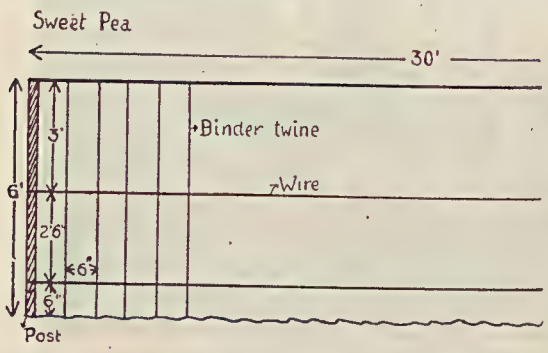
Plants for winter flowers should face the east and north-east. If they are to be sown in the open, make the rows north and south, so that there may be blooms on both sides; if the rows run east and west the flowers will be practically all on the north or sunny side.

Soil Preparation.—The preparation of the soil should commence 3 to 4 weeks before sowing. Make a trench about 2 feet wide and 1½ to 2 feet deep; place from 4 to 6 inches of well-rotted cow manure in the bottom of the trench, and replace the soil in its original position. Lime should be worked into it at the rate of 1 lb. for every 5 yards length of row. If the ground is dry, give the trench a good watering. Just prior to sowing, work into the top soil a mixture of 1 part potash and 3 parts super. at the rate of

1 lb. to 12 yards length of the trench. Sow the seeds in drills in the rows six inches apart and an inch below the surface. Cover them with light sandy soil and then give them a thorough watering.

When the plants are about six inches above the ground pinch them back. This will bring out shoots called laterals, and the best blooms are produced on these. If the weather is very hot, shelter the young plants with small twigs of bushes.

Provision for climbing varieties is essential and usually wire-netting or the divisional fence is utilized in the small garden. In the open, tea-tree or bamboo stakes may be used; if grown



Some provision should be made for climbing varieties of sweet peas. This diagram shows a suitable scheme for extensive plantings.

extensively, three wires with binder twine attached at right angles are used for plant to climb up. When the first flower buds appear, add a dressing of 1 part potash to 3 parts super. at the rate of 1 lb. to each 16 yards of trench and water it in. To prolong the flowering period keep the blooms well picked. Should a very heavy frost occur the plants should be protected. After frosts, give a light watering before sunrise.

Varieties.—There is a large number of varieties many of which can be distinguished from each other only by the specialist. One of the best to grow is the Shirley Temple. It has long stalks which produce large frilled blooms, usually four per stem, of a delightful pink colour. Florist Blue is the nearest approach to a blue Sweet Pea; it can be grown easily and blooms freely. Josie, a long-stemmed variety, is a good grower, and produces rose-pink blooms with white centres.

The flowers of Orange King are of a good orange colour. Radiance, a popular variety, has flame-colored flowers; those of Sunset are scarlet; those of Ormonde, lavender.

If a good strain is obtained, the seed should be collected. With the seed of Sweet Peas, amateurs frequently get satisfactory results.

During the autumn, aphis are likely to be present. Spray for control with nicotine sulphate.

The Vegetable Garden.

Although it is getting late to sow winter vegetables a final sowing of quickly maturing cabbages, such as Early York or Enfield Market, may still be made. Parsnips, carrots, and such crops, if sufficiently advanced, should be thinned out and kept well watered during any dry spell. A first sowing of garden peas should be made this month; William Hirst is a good early variety. Asparagus foliage should be cut down to within 2 inches of the ground level and the bed weeded and lightly forked over between the rows. Add a dressing of farm-yard manure, which in addition to adding plant food, protects the crowns from heavy frosts.

Broad Beans.

Now is a good time to sow broad beans—the hardiest of the bean family—though they will not thrive where frosts are severe.

There is a variety whose young pods may be eaten, but the general practice is to use only the young seeds.

Soil Preparation.—The soil should be well worked up and trenches made to a depth of 18 inches. In the bottom of the trench place 2 to

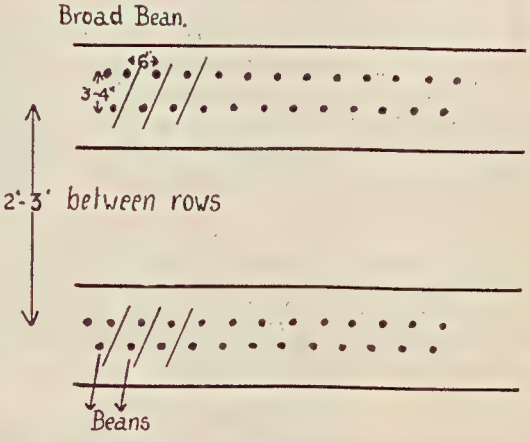


Diagram showing the distance at which to plant broad beans.

3 inches of animal manure and work some soil through it and fill the trenches with soil mixed with superphosphate at the rate of 1 lb. for each 10 yards of trench. The trenches should be

2 to 3 feet apart. To ensure a succession of beans it is advisable to have separate sowings in February, March, and April.

Sowing.—Make two drills along each prepared trench 3 to 4 inches apart and in them plant the seed 6 inches apart and 1½ to 2 inches deep. These double rows should be from 2 to 3 feet apart.

Varieties.—Leviathan Long Pod, Coles Dwarf Prolific, and Broad Windsor are the most popular.

During the growing period keep the ground well hoed and slightly earth up the row. In the late autumn aphis may attack the plants; if this happens, spray with nicotine sulphate.

Orchard Notes

By J. L. Provan, B.Agr.Sc., Senior Horticultural Instructor.

Although during March orchardists are still busy with the harvesting of pome fruits, late canning peaches, passion-fruit, or nuts, there are other important cultural operations which need attention. The majority of Victorian orchard soil is of low fertility and poor physical condition. In many orchards this is reflected in the trees' growth and it is common to find trees, carrying heavy crops of fruit, which fail to make adequate lateral growth. The remedy for this condition is the constant use of cover crops and fertilizers.

A fine cover crop of peas—the result of early sowing and irrigation.

Cover crops may be natural weeds stimulated by fertilizer applications in the autumn, sown legumes or cereals. All are beneficial because when ploughed under, they increase the organic matter in the soil, improve tilth, and increase the nitrogen content. Some orchardists have gained the erroneous impression that only legumes should be sown as cover crops. In many acid soils, particularly those of low fertility, it is difficult to grow a satisfactory cover crop of legumes, and under these conditions barley will be found very useful. Where abundant growth can be obtained, legumes should be preferred, because of their capacity for quickly building up the nitrogen content of a soil.

In northern irrigated orchards, tick beans sown in early March, at the rate of 1 to 1½ bushels per acre, with 2 cwt. of superphosphate, has been the principal cover crop for many years. In southern Victoria, peas are favoured, and they are usually sown, in alternate lands, in April, at the rate of 1 bushel per acre with 2 cwt. of superphosphate. Better results would be obtained with earlier sowing and wherever possible, sowing should be completed in early March. For the past few years dry autumns have caused delays in sowing cover crops. Where water is available, one or two irrigations will be found beneficial. Early sowing, fertilizer application, and irrigation where possible, will promote an abundant growth which will be ready for ploughing under in early spring. The addition of 1 or 2 cwt. of sulphate of ammonia to the superphosphate will be found useful in assisting growth.

In March, codling moth will be active and this pest can do a lot of damage to the mature fruit. Penetration of the young larvae is very rapid in the ripe fruit, and the best method of attack at this period is to destroy the eggs by applications of white oil sprays 1 in 60, rather than to rely on cover sprays of lead arsenate, which even if the spray is effective, means that "stinging" will occur.

During March and April subsoiling can be practised. Where plow-sole or hard-pan exists three cuts with the subsoiler down the centre of

Showing, in the foreground, a poor growth of sick beans and peas on unsubsoiled land, and, in the background, good growth on subsoiled lands.

each land will be found beneficial. Next year the subsoiling can be done across these lands. In the Goulburn Valley and northern districts, some orchard soils are greatly improved by subsoiling. Better water penetration occurs and growth of cover crops has been improved.

The harvesting of Late Valencia oranges is practically completed and, generally, citrus fruits are scarce during March and early April. Fumigation and white oil spraying for the control of red scale can be continued, but although good results may be obtained, the dead scale may have already blemished the developing fruit. Early treatment is advisable and will result in cleaner fruit at picking time.

Citrus trees which were cut back for reworking last spring can be budded now. For successful budding the bark of the stock and scion must be active, i.e., easily separated from the wood. Remove the wood from the bud and tie firmly, but not tightly, with raffia. Examine buds in three weeks' time and remove the raffia. These buds will remain dormant until next spring. Limbs on which buds have failed can be re-budded. In choosing budwood select only well-rounded wood from good-type trees. A pamphlet on citrus budding is available free on application to the Director, Department of Agriculture, Melbourne, C.2.

Almonds and walnuts should be harvested as soon as they fall. Almonds can be knocked from the trees with long bamboo poles and collected in canvas or thick hessian sheets laid beneath the trees. Remove the hulls from the nuts immediately; delaying this operation increases its difficulty. The clean nuts should then be quickly and thoroughly dried in the sun. Walnuts commence to fall during March, and to prevent staining they should be picked up immediately. Walnuts fall quickly after rain or wind and will require dehydrating either by mechanical or natural means.

Viticultural Notes

By D. G. Quinn, Viticulturist.

In the irrigation areas, rack repairing and the cleaning up of drying grounds has received attention; currant drying is well in hand and sultana picking is about to commence. Last month the lure pots indicated that a remarkably large number of light brown apple moths were on the wing, and it will be interesting to note the amount of damage caused by this insect in what promises to be a good drying season. Table grapes are now arriving in Melbourne in excellent order and will continue to come forward through the month. The O'Hanez crop promises to permit a larger export season than usual. Towards the end of March the advantages to be gained from early sown cover crops should be kept in mind.

In the phylloxerated areas yema grafting operations may be undertaken provided the sap is moving freely, and the presence of fresh growth on the shoots may be taken as sufficient evidence of this. Wine-making has already begun in areas prematurely ripened by drought, and vintage will be in full swing several weeks earlier than usual.

The Department has pure cultures of the St. Emilion and Burgundy strains of yeast available for distribution, on solid media, from the Biological Laboratory, Burnley, or in liquid form from the Viticultural Station, Rutherglen. At the latter centre a plant for producing sulphurous acid has been erected, from which growers may obtain supplies of the 5 per cent. standard solution at cost, viz., 9d. per gallon. An article on this subject will appear in a subsequent issue of this Journal.

Standard Herd Records

For Quarter ended 31st December, 1937

In the following is set out the records of all cows which completed a lactation during the quarter. The number is 208, of which 141 qualified for the certificate. The figure in brackets after the owner's name shows the number of entries.

The amount of butter-fat required for qualification varies with the age class to which the animal belongs, the standard being as follow:—

Junior 2 year old (under 2½ years at time of calving)	230 lb. butter fat.
Senior 2 year old (between 2½ and 3 years at time of calving)	250 lb. butter fat.
Junior 3 year old (between 3 and 3½ years at time of calving)	270 lb. butter fat.
Senior 3 year old (between 3½ and 4 years at time of calving)	290 lb. butter fat.
Junior 4 year old (between 4 and 4½ years at time of calving)	310 lb. butter fat.
Senior 4 year old (between 4½ and 5 years at time of calving)	330 lb. butter fat.
Mature cow 5 years and over	350 lb. butter fat.

(Except where otherwise stated, the period of test was 273 days.)

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk. lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.	Sire.
Alston, N. B. and Sons, Romsey, Jersey (1).										
Rosyth Noble Countess ..	59335	13.3.37	15	4,923	5·53	272·01	230	Jr. 2	.. ..	Werribee Gaypiece
Atkinson W. K., Swan Hill, Dairy, Shorthorn (8).										
Willow Park Blush 5th ..	D.S.H.B.	27.2.37	34	11,040	3·97	438·36	350	Mature	393, 430, 428	Willow Park Banker 2nd
Willow Park Camellia 10th	..	20.3.37	29	9,174	3·94	361·27	330	Sr. 4	342 ..	Willow Park Silvermine 4th
Willow Park Comet 2nd ..	..	19.3.37	36	12,185	3·50	426·92	350	Mature	239, 311, 363, 348, 339, 458, 488, 421	Willow Park Count
Willow Park Countess 10th ..		29.12.36	36	12,054	3·74	450·97	350	Mature	371, 415, 405	Willow Park Reflector
Willow Park Countess 14th ..		17.3.37	21	8,309	3·82	317·15	270	Jr. 3	250 ..	Willow Park Silvermine 4th
Willow Park Moss Rose 6th ..		28.12.36	22	8,313	3·66	304·47	310	Jr. 4	283 ..	Willow Park Imperial 3rd
Willow Park Moss Rose 8th ..		19.3.37	34	10,538	3·83	403·65	330	Sr. 4	232 ..	Willow Park Sherlock
Willow Park Queenie 32nd ..		15.3.37	13	8,523	3·74	318·48	290	Sr. 3	227 ..	Willow Park Imperial 3rd
Ballarat Orphanage, Ballarat, Jersey (6).										
Argyle Sissy Lee ..	37192	20.2.37	26	7,617	5·47	416·97	350	Mature	.. ..	Audrey's Prince of Banyule
Orphanage Attractive 6th..	C.R.	26.2.37	17	4,760	6·43	305·99	230	Jr. 2	.. ..	Retford King Bracken
Orphanage Doris ..	25255	21.3.37	15½	7,956	4·67	371·37	350	Mature	285, 356, 274	Nobleman of Garden Vale
Orphanage Melba 6th ..	49970	11.2.37	18½	7,814	4·80	375·29	330	Sr. 4	.. ..	Murona Airmine
Orphanage Molly 6th ..	58823	7.3.37	15½	4,928	5·14	253·08	230	Jr. 2	.. ..	Retford King Bracken
Orphanage Pearl 7th ..	54579	5.1.37	15	6,204	5·06	313·69	270	Jr. 3	.. ..	Orphanage V.C.'s Trooper
Bigger, R., Monomeith, Jersey (2).										
Waiora Park Letitia ..	42398	10.3.37	17½	5,762	5·21	300·17	350	Mature	.. ..	Banyule Airshaft
Waiora Park Letitia 2nd ..	51058	24.1.37	22	5,808	4·86	282·08	290	Sr. 3	.. ..	Glenavon Diana's Prince
Black, Mrs. A. J., Noorat, Jersey (1).										
Kyora Sybil 4th	58084	12.3.37	16½	5,634	6·33	356·57	290	Sr. 3	.. ..	Gadget (Imp.)
Black, I. S., Noorat, Ayrshire (2).										
Mount Noorat Peggy 2nd..	27559	26.2.37	4½	4,861	4·37	212·22	290	Sr. 3	277 ..	Gowrie Park Soldier
Mount Noorat Poppy 2nd..	26591	23.3.37	15½	7,473	4·87	364·25	350	Mature	340, 366, 340	Scottish Hero of Gowrie Park
Broad, A. A., Estate of, Sutton Grange, Jersey (2).										
Grangelea Dawn	33037	21.3.37	18	5,981	6·35	379·78	350	Mature	307, 388, 373, 345	Banyule Macon
Grangelea Rose	33040	7.3.37	17	8,721	4·88	425·19	350	Mature	411, 567, 561, 547, 444	Banyule Airo
Calf, A. J., Werribee South, Jersey (1).										
Clarendon Eyre Tangerine 4th	39261	8.2.37	30	9,561	4·91	469·58	350	Mature	408 ..	Clarendon Eyre Happy Husband
Clark, F. W., Toora, Jersey (2).										
Banyarra Sunbeam ..	42878	27.3.37	24	7,568	5·25	397·57	350	Mature	244, 352 ..	Banyule Ventilation
Mer Vue Choice Melody ..	58405	25.1.37	14	5,876	6·67	391·91	230	Jr. 2	.. ..	Berrington Largo
Clark, P. W., Whittlesea, Jersey (2).										
Mandara Patience ..	54311	6.2.37	21½	7,026	5·18	364·00	310	Jr. 4	.. ..	Relbia Vic
Wattle Grove Jennifer Jean	51143	18.2.37	12½	5,225	4·95	258·39	230	Jr. 2	.. ..	Fairview Chief
Colenso, L. W. R., Alvie, Jersey (2).										
Maxon Counts Lady 2nd ..	45058	2.3.37	15	5,078	5·80	294·57	330	Sr. 4	315, 342 ..	Maxon Count Graceful
Normandie Mayflower 8th..	58748	21.1.37	9½	3,258	5·41	176·15	230	Jr. 2	.. ..	Normandie Majestic

Standard Herd Records—*continued.*

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.	Sire.
Coughlin, C., Catani, Jersey (11).										
Clyde Vale Jewel ..	39293	26.12.36	15	4,487	6·14	275·45	330	Sr. 4	244, 290, 254	Banyule Aristocrat
Gladys Park Beauty 2nd ..	C.R.	22.2.37	18	5,445	6·29	342·61	230	Jr. 2	.. ..	Werribee Bluebell's Masterpiece
Gladys Park Beauty's Choice	C.R.	23.2.37	18	5,702	5·09	290·39	230	Jr. 2	.. ..	Gladys Park Jessie's Masterpiece
Gladys Park Gaiety Girl 2nd	52792	24.2.37	14	4,253	6·31	268·23	250	Sr. 2	317 ..	Werribee Bluebell's Masterpiece
Gladys Park Gaiety Girl 3rd	C.R.	6.3.37	10½	4,227	5·94	251·06	230	Jr. 2	.. ..	Werribee Bluebell's Masterpiece
Gladys Park Master Lady..	48212	19.3.37	15½	5,151	6·63	341·69	290	Sr. 3	279 ..	Werribee Bluebell's Masterpiece
Gladys Park Masters Petal	48213	25.3.37	12½	5,454	5·01	273·50	310	Jr. 4	325, 319 ..	Werribee Bluebell's Masterpiece
Gladys Park Masters Petal 3rd	C.R.	23.2.37	13	3,669	5·77	211·61	230	Jr. 2	.. ..	Werribee Bluebell's Masterpiece
Gladys Park Silver Bell ..	48216	13.3.37	11	6,342	5·03	319·01	330	Sr. 4	315, 436 ..	Banyule Silverstrain
Gladys Park Sweet Bell ..	37141	17.3.37	8½	4,382	5·25	229·93	350	Mature	201 ..	Leathorne Maid's Chief
*Glen Alvie Millicent ...	48231	9.2.37	4	4,530	5·22	236·40	290	Sr. 3	271 ..	Edmonton Butter King
Coulthard, J. L. and Son, Whittlesea, Jersey (2).										
Jubilee Laconia	44531	19.1.37	15½	4,820	5·96	287·44	350	Mature	334 ..	Jubilee Wheatenlight
Walamba Morning Star ..	Vol. 24	26.3.37	7	5,840	4·80	280·45	250	Sr. 2	.. ..	Clarendon Eyre Brigadier 3rd
Crawford, Mrs. E., No. 2 Farm, Traralgon, Jersey (2).										
Balneil Golden Petal ..	38784	19.2.37	19½	5,999	5·74	344·20	350	Mature	294, 349, 345	Coolooli Jersey King
Balneil Eminent Duchess ..	C.R.	14.3.37	17	4,890	5·47	267·46	250	Sr. 2	.. ..	Wompini Royal Master
Creed, C. S., Werribee South, Jersey (6).										
Grangelea Daisy Bell ..	33034	18.1.37	26	7,539	4·73	356·37	350	Mature	247, 334, 340, 370	Banyule Macon
Grangelea Golden ..	28499	17.3.37	19	6,627	5·07	336·11	350	Mature	335, 470, 551, 483, 466	Grangelea Dandy
Grangelea Machree 2nd ..	57538	14.1.37	17½	4,408	5·84	257·25	230	Jr. 2	.. ..	Grangelea Victor 3rd
Grangelea Roseleaf 5th ..	57549	19.2.37	19	5,187	5·13	266·03	230	Jr. 2	.. ..	Banyule Macon
Victoria Winsome ..	37218	18.1.37	27½	6,522	5·40	351·91	350	Mature	377, 479, 435	Victoria Master Mariner
Wattle Grove Jessica ..	55802	12.3.37	22	5,610	5·34	299·52	250	Sr. 2	248 ..	Fairview Chief
Department of Agriculture, Burnley, Jersey (1).										
Victoria Sea Maiden ..	55709	9.2.37	12½	5,571	5·38	300·00	230	Jr. 2	.. ..	Melrose Lord Essex
Department of Agriculture, Werribee, Friesian (5).										
Victoria Domino	5107	25.1.37	33	11,942	3·92	468·71	310	Jr. 4	362, 347 ..	Victoria Joyous Mercedes
Victoria Quilt	3767	1.2.37	31	14,774	3·72	549·34	350	Mature	328, 480, 553, 507, 440	Victoria Topnote
Victoria Soprano ..	3265	13.1.37	21½	15,590	3·38	527·02	350	Mature	372, 454 ..	Victoria Topnote
Victoria Streaky Patch ..	3769	2.2.37	10	9,527	3·47	330·36	350	Mature	399, 438, 390	Dominion Oakdale
Victoria Woodcrest Daisy..	5112	1.3.37	28	11,649	3·65	424·87	310	Jr. 4	307, 389 ..	Victoria Joyous Mercedes
Department of Agriculture, Werribee, Red Poll (14).										
Victoria Avocet	3892A	21.3.37	30	9,446	4·06	383·53	350	Mature	215, 287, 355	Dominion Bright Belgian
Victoria Bell Rose ..	3511AA	28.2.37	4	7,929	4·13	327·43	350	Mature	253, 340 ..	Victoria Major Royal
Victoria Blue Eye ..	3883A	12.2.37	15	8,492	4·04	342·81	270	Jr. 3	308 ..	Dominion Bright Belgian
Victoria Bolero	Vol. 9	27.1.37	11	5,070	4·80	243·14	230	Jr. 2	.. ..	Woodburn Peter Pan
Victoria Bursary ..	4884A	1.2.37	17½	5,941	5·21	309·32	270	Jr. 3	265 ..	Dominion Bright Belgian
Victoria Casino	4046B	13.1.37	14½	6,989	4·10	286·69	330	Sr. 4	230, 285 ..	Victoria Royal Ringer
Victoria Curlicue ..	4505AA	11.1.37	17½	7,349	4·75	349·10	270	Jr. 3	270 ..	Victoria Gallant
Victoria Idocrase.. ..	Vol. 9	9.2.37	14½	7,383	3·74	276·11	270	Jr. 3	205 ..	Victoria Gallant
Victoria Lady Velvet ..	2758	1.3.37	28	9,663	4·29	414·73	350	Mature	254, 333, 358	Earl of Beaconsfield
Victoria Marsupalia ..	3916A	31.12.36	25	9,238	4·64	429·08	310	Jr. 4	290 ..	Dominion Bright Belgian
Victoria May Queen ..	3514AA	4.2.37	23	9,215	3·97	365·65	330	Sr. 4	271, 298 ..	Victoria Royal Ringer
Victoria Rebel	2333A	23.2.37	13	10,086	4·18	422·00	350	Mature	327, 310, 427, 404, 392, 360	Vice Regal
Victoria Ribbon	Vol. 9	12.2.37	17	6,035	4·46	268·93	230	Jr. 2	.. ..	Woodburn Peter Pan
Victoria Waac	3929A	25.3.37	15½	7,701	4·79	369·16	310	Jr. 4	261, 284 ..	Dominion Bright Belgian
Desmond, J. J., Rochester, Jersey (3).										
Macroom Sweet Nell ..	33277	15.2.37	9	5,715	5·60	319·97	350	Mature	314, 444, 400, 430, 441	Belgonia Battery
Taranah Fairy	16716	13.3.37	17	7,463	6·55	488·62	350	Mature	351, 445, 457, 484, 485, 453, 474, 558, 560, 558, 495	Lily 6th's Son of Melrose
View Banks Perree's Lassie	59882	10.2.37	25	7,445	6·92	515·36	350	Mature	429 ..	Werribee Gaypiece
Fixter, A., Boisdale, Guernsey (1).										
Fernlea Rosebud ..	2681	28.2.37	20½	6,267	5·69	356·46	350	Mature	285, 344, 386, 373, 376, 331	Werribee Jessie's Boy

* 240 days in test.

STANDARD HERD RECORDS—*continued.*

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk. lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.	Sire.
Fixter, W., Boisdale, Jersey (1).										
Olivedale Vanilla.. ..	41373	25.3.37	23	8,751	6·22	544·45	350	Mature	334, 428, 474	Studleigh Dandy
Foster Bros., Boisdale, Jersey (4).										
Boisdale Canary 2nd ..	43047	28.12.36	10	3,639	6·20	225·46	330	Sr. 4	262, 310 ..	Gladiator of Springhurst
Boisdale Goldfinch 2nd ..	56433	9.2.37	12½	3,122	5·37	167·62	230	Jr. 2	.. ..	Wompini Master Grey
Boisdale Princess ..	56434	13.1.37	13	2,612	5·06	132·09	230	Jr. 2	.. ..	Boisdale Dazzler
King's Vale Canary 24th ..	28324	23.1.37	4½	2,912	4·87	141·72	350	Mature	303, 330, 395, 328, 340	Linda 55th's V.C. of King's Vale
Fraser, G. A., Addington, Ayrshire (1).										
Bonnie Doon Heather ..	22525	9.1.37	44½	12,563	5·85	735·14	350	Mature	378, 557, 611, 625	Carlo of the Valley
Gay, R. G. and Son, North Devon, Jersey (1)										
Myrtle Point Verbena ..	58643	26.3.37	18	7,361	4·91	361·23	290	Sr. 3	335 ..	Werribee Master's King
Goddard, J. H., Cora Lynn, Ayrshire (1).										
Inverurie Festivity ..	27415	7.2.37	13½	6,266	4·32	270·77	310	Jr. 4	321 ..	Gowrie Glen Flash Duke
Gregg, V., Whittlesea, Jersey (1).										
Stoneycroft Roma ..	42020	7.1.37	14	5,144	5·74	295·30	350	Mature	347, 370, 387, 381	Kantara Don Juan
Handley, S. C., Dandenong, Jersey (1).										
Barrowby Rosalind ..	47135	4.2.37	31	9,249	5·89	544·75	290	Sr. 3	337, 442 ..	Grangelea Progress
Harvey, T., Boisdale, Jersey (3).										
Jerseyholm Empress 30th..	40377	24.3.37	16	5,301	5·99	317·47	350	Mature	326, 363, 316	Werribee Master's Fox
Jerseyholm Empress 31st..	40378	29.1.37	16½	5,608	5·06	283·89	350	Mature	302, 337, 271	Werribee Master's Expert
Jerseyholm Lady Marge 14th	53367	31.1.37	13½	4,466	5·58	248·98	270	Jr. 3	273 ..	Werribee Master's Fox
Henderson, W., Grasmere, Ayrshire (1).										
Carracoorte Bellona's Image	25902	20.2.37	17	6,893	4·60	317·42	350	Mature	222, 326 ..	Carracoorte Pilot
Hore, E., Leitchville, Jersey (2).										
Taranah Roseleaf 4th ..	37589	17.2.37	27	9,628	5·45	524·81	350	Mature	445, 450 ..	Taranah Submarine
Taranah Tulip	59636	9.3.37	18	6,461	4·93	318·71	250	Sr. 2	.. ..	Taranah Hercules
Huffer, J. A., Gormandale, Jersey (5).										
Glen Valley Golden Belle..	57471	16.3.37	N.O.C.	5,673	5·66	320·93	290	Sr. 3	294 ..	Brucevale Wyandotte's King
Glen Valley Handsome Girl 2nd	40001	27.1.37	20	6,132	5·76	353·08	350	Mature	281, 367, 452	Glen Valley Butter Maker's Boy
*Glen Valley Quick Sand 2nd	40004	20.3.37	...	6,915	5·60	387·39	350	Mature	310, 371 ..	Melrose Ensign
Glen Valley Roseleaf ..	48440	22.3.37	20½	6,098	5·78	352·42	270	Jr. 3	281 ..	Brucevale Wyandotte's King
Glen Valley Velvet Rose ..	44119	13.1.37	21	5,520	6·05	333·90	310	Jr. 4	272 ..	Brucevale Wyandotte's King
Hurrey, W. H., Koonwarra, Jersey (1).										
Kooreena Carrie 7th ..	58055	21.1.37	N.O.C.	4,559	6·12	279·03	230	Jr. 2	.. ..	Kooreena Carrie 3rd's Halo
King, W. H., Warragul, Jersey (5).										
Karoola Betty	57962	27.3.37	18	6,187	4·79	296·47	230	Jr. 2	.. ..	Glen Valley Royal Master
Karoola Freda	37699	27.3.37	26½	8,073	5·14	414·84	350	Mature	289, 415 ..	Glenallen Mariposa
Karoola Marie	25442	3.3.37	23½	7,454	5·20	387·55	350	Mature	319, 413, 403, 450, 358, 393, 320	Waverley's Count of Glen Valley
Karoola Mavis	33440	4.3.37	29	9,229	5·51	508·31	350	Mature	326, 394, 397, 528, 447	Glenallen Mariposa
Karoola Poppy	57965	27.2.37	11½	3,763	6·49	244·28	230	Jr. 2	.. ..	Glen Valley Royal Master
Lane K. D., Merino, Jersey (3).										
Dalray Master Lass ..	52452	2.2.37	19½	4,442	5·98	265·54	230	Jr. 2	.. ..	King's Vale Brunette 23rd's Lad
Dalray Stumpy	33447	22.2.37	17½	3,972	5·27	209·45	350	Mature	245 ..	Twinkle's Twylish of Aveley
Kyora Dream Girl 2nd ..	38173	22.3.37	19½	5,672	6·15	349·02	350	Mature	309, 329, 326	Woodside Reprieves Volunteer
Le Noury, E., Werribee South, Guernsey (4).										
Eyrie Bower Buttercup ..	1241	5.1.37	13	5,861	5·05	296·05	350	Mature	.. ..	Eyrie Bower Brilliant
Loulous Darling 2nd of The Salines (Imp.)	3930	3.1.37	8½	5,081	5·21	264·55	350	Mature	311, 242, 276	Clara's Rambler of Maple Lodge
Werribee Camila's Darling	3481	17.2.37	19½	7,060	4·72	333·27	350	Mature	263, 388 ..	Camilla's Majestic of Maple Lodge
†Werribee Golden Maid ..	5041	24.2.37	4	3,855	5·14	198·29	310	Jr. 4	244 ..	Melbourne Don 7th
Longerenong Agricultural College, Dooen, Ayrshire (1).										
Longerenong Laureate ..	26557	24.3.37	20½	8,871	4·44	394·14	350	Mature	347, 300, 234, 398	Lily's Lad of Holly Green

* 240 days in test (sold). † 240 days in test.

STANDARD HERD RECORDS—*continued.*

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk. lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.	Sire.
Lyon, C. G., Heidelberg, Jersey (14).										
Banyarra Silvermine 3rd ..	51648	21.3.37	19½	6,626	4·57	302·93	230	Jr. 2	.. ..	Banyarra Velvetation
Banyule Molly 51st ..	47124	3.3.37	13½	4,813	6·31	303·51	230	Jr. 2	.. ..	Banyule Triplane
Banyule Molly 52nd ..	47125	19.3.37	15½	5,093	4·54	231·13	230	Jr. 2	.. ..	Oxford Beaus' Pretty Oxford (Imp.)
Banyule Silvermine 53rd ..	25471	29.12.36	27	9,660	4·73	457·04	350	Mature	387, 445, 465, 545	Air Lord of Banyule
Banyule Silvermine 83rd ..	38805	10.2.37	25½	9,147	4·62	422·75	310	Jr. 4	380, 423 ..	Banyule Lord Silvair
Banyule Silvermine 85th ..	42887	2.2.37	23	6,413	5·29	339·17	290	Sr. 3	338 ..	Banyule Airo
Banyule Silvermine 86th ..	42888	24.3.37	16½	7,611	5·90	449·12	290	Sr. 3	409 ..	Banyule Triplane
Banyule Silvermine 91st ..	42893	9.3.37	26	6,692	5·05	338·01	270	Jr. 3	308 ..	Oxford Beau's Pretty Oxford (Imp.)
Banyule Tiddlewinks 13th	38808	31.12.36	24	6,977	5·84	407·37	310	Jr. 4	450, 419 ..	Banyule Triplane
Banyule Tiddlewinks 16th	42895	20.3.37	14½	6,891	5·64	388·64	270	Jr. 3	309 ..	Oxford Beau's Pretty Oxford (Imp.)
Banyule Tiddlewinks 20th	47131	6.3.37	17	5,646	4·86	274·63	230	Jr. 2	.. ..	Oxford Beau's Pretty Oxford (Imp.)
Leeholme Lady	37787	27.3.37	21½	7,769	5·05	392·64	350	Mature	277, 343, 350	Redford Mayflower's King
Rowallan Jessamine ..	46084	9.3.37	16	7,521	4·86	365·18	310	Jr. 4	.. ..	Banyule Molar
Rowallan Jessamine 2nd ..	50514	6.1.37	24	7,414	4·16	308·09	250	Sr. 2	.. ..	Rowallan Rajah
Lyon W. H., Sale, Jersey (2).										
Olivedale Buttercup ..	37381	28.12.36	15	7,005	5·34	374·01	350	Mature	395, 366, 348, 370, 352	Studleigh Dandy
*Studleigh Harebell 16th ..	50708	2.2.37	..	5,933	5·46	324·13	310	Jr. 4	259, 294 ..	Bellefaire Blonde's Blondex
Macauley, C. W. W., Rochester, Jersey (1).										
Taranah Radiance 2nd ..	59634	9.2.37	21	6,662	5·23	348·43	230	Jr. 2	.. ..	Taranah Commander
McCosh, S. J., Wandin North, Jersey (4).										
Goronga Farm Daffoplane..	38094	21.3.37	15½	4,449	5·32	236·89	350	Mature	240, 192, 289, 375, 316	Banyule Triplane
Heathermont Brilliant Rosette	53156	18.1.37	22½	5,348	5·67	303·09	230	Jr. 2	.. ..	Glen Valley Masterman
†Heathermont Countess ..	48639	13.2.37	4	3,630	5·56	201·96	250	Sr. 2	212 ..	Woodside Mabel's Volunteer
Heathermont Modesty ..	53157	6.2.37	15½	4,217	5·40	227·52	250	Sr. 2	.. ..	Werribee Madeira's Ace
McDougall, J., Byaduk, Jersey (10).										
Parkview Blossom 2nd ..	50080	3.3.37	15½	4,911	4·92	241·71	290	Sr. 3	259 ..	Staghorn Fancy's Observer 2nd
Park View Bluebell ..	50081	3.3.37	19½	6,336	4·69	296·99	290	Sr. 3	265 ..	Staghorn Fancy's Observer 2nd
Park View Cream Rose ..	54674	28.3.37	16½	5,622	4·77	268·09	290	Sr. 3	279 ..	Grangelea Royal
Park View Larkspur ..	50086	17.2.37	18	5,042	5·53	278·92	290	Sr. 3	277 ..	Staghorn Fancy's Observer 2nd
Park View Lona 4th ..	58923	20.3.37	16½	5,456	6·00	327·43	230	Jr. 2	.. ..	Staghorn Fancy's Observer 2nd
Park View Myrtle 2nd ..	45650	22.2.37	19½	5,792	5·10	295·29	310	Jr. 4	293, 278 ..	Grangelea Royal
Park View Nola 2nd ..	45651	28.2.37	14	4,608	5·62	258·82	330	Sr. 4	259, 264 ..	Grangelea Royal
Park View Novelty 2nd ..	45652	18.2.37	25	6,275	4·79	300·36	310	Jr. 4	278, 302 ..	Grangelea Royal
Park View Peggy 2nd ..	50087	16.3.37	18½	5,111	5·18	264·98	270	Jr. 3	289 ..	Staghorn Fancy's Observer 2nd
Park View Poppy ..	58926	23.2.37	14	4,280	5·03	215·33	230	Jr. 2	.. ..	Staghorn Fancy's Observer 2nd
McNabb, G. A. and Son, Irrewillipe East, Jersey (10).										
Maxon Chieftain's Bell ..	58345	24.3.37	14	4,673	4·82	225·13	230	Jr. 2	.. ..	Maxon Chieftain
Maxon Chieftain's Light ..	58346	19.3.37	15	5,690	4·98	283·23	230	Jr. 2	.. ..	Maxon Chieftain
Maxon Chieftain's Lodestone 2nd	58347	26.3.37	15½	5,907	5·32	314·38	230	Jr. 2	.. ..	Maxon Chieftain
Maxon Countess Linnacre..	45060	11.2.37	17½	7,334	5·85	429·16	330	Sr. 4	400 ..	Maxon Count's Graceful
Maxon Count's Pearl 2nd..	54021	20.3.37	15	5,281	5·14	271·65	250	Sr. 2	242 ..	Maxon Count's Graceful
Maxon Count's Ranunculus	58352	27.3.37	15½	5,513	5·83	321·28	230	Jr. 2	.. ..	Maxon Count's Graceful
Maxon Graceful Duchess 3rd	58354	18.3.37	14½	4,092	5·69	232·70	230	Jr. 2	.. ..	Maxon Chieftain
Maxon Miss Linnacre 4th..	58356	18.3.37	14½	5,130	4·82	247·50	230	Jr. 2	.. ..	Maxon Chieftain
Maxon Noble's Buttercup..	45068	12.2.37	27½	7,755	5·54	429·66	330	Sr. 4	338 ..	Avalon Noble 8th
Maxon Noble's Pansy 2nd..	54027	27.3.37	16½	6,068	5·21	316·11	250	Sr. 2	248 ..	Avalon Noble 8th
Maher, R. H., Tongala, Jersey (1).										
Rosemont Lady Fowler 13th	59287	27.12.36	15	4,193	5·05	211·86	230	Jr. 2	.. ..	Rosemont Golden Emblem
Maloney, P. J., Tongala, Jersey (1).										
Belgonia Design's Marie ..	42919	20.1.37	18½	8,291	5·27	437·09	330	Sr. 4	377, 467 ..	Design's Ruler (Imp.)
Meaklim Bros., Mooroopna, Dairy Shorthorn (3).										
Drumneil Fairy 4th ..	D.S.H.B.	12.3.37	26	10,710	3·62	388·05	270	Jr. 3	352 ..	Willow Park Reformer
Drumneil Lilly	..	15.3.37	45	12,194	3·89	474·37	310	Jr. 4	423 ..	Willow Park Reformer
Drumneil Pearl	..	14.3.37	29	8,246	3·79	312·34	290	Sr. 3	282 ..	Willow Park Reformer
Mitchell, R. H., Linton, Jersey (2).										
Clifford Farm Joyous Melody	52272	27.1.37	24	6,875	5·93	407·95	270	Jr. 3	379 ..	Wompini V.C.
Clifford Farm Lady Sarah..	34264	22.3.37	16	6,615	6·24	412·48	350	Mature	483, 529, 499, 480	Clifford Farm Eliminator

* 240 days in test (herd withdrawn). † 210 days in test.

Standard Herd Records—*continued.*

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk. lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.		Sire.
Moore, J. and Co., Yarram, Jersey (7).											
Clarendon Eyre Belladonna 8th	56797	24.3.37	16½	5,274	5·20	274·10	230	Jr. 2	..	..	Clarendon Eyre Oxford Observer
Clarendon Eyre Camille 11th	56799	3.3.37	23½	5,576	5·34	297·75	230	Jr. 2	..	..	Victorious Pioneer (Imp.)
Clarendon Eyre Rose Marie 12th	56810	15.3.37	17½	4,829	5·26	253·85	230	Jr. 2	..	..	Clarendon Eyre Oxford Gamboge
Tooloonook Heather 4th ..	59755	19.3.37	19½	6,426	4·86	312:17	290	Sr. 3	240	..	Tooloonook Plumbago's Hero
Tooloonook Molly 12th ..	59759	25.3.37	17	5,607	4·57	256·07	230	Jr. 2	..	..	Anfield Diadem's Masterpiece
Tooloonook Peach 3rd ..	55573	11.3.37	15	5,639	5·20	293·29	350	Mature	306, 314, 206		Heroic of Somerville
Tooloonook Peach 4th ..	46471	24.3.37	22½	6,858	4·32	296·33	350	Mature	236, 256, 273		Heroic of Somerville
Murdoch, J. and Son, Lismore, Jersey (1).											
Murona Petal 8th ..	54326	14.3.37	10½	4,232	5·63	238·28	250	Sr. 2	..	..	Retford King Bracken
Nancarrow Bros., Kerang, Jersey (2).											
Pine Ridge Dream Girl ..	54753	26.2.37	16	6,898	5·34	368·49	250	Sr. 2	327	..	Woodside Reprieve's Volunteer
Pine Ridge Duchess ..	37972	27.2.37	22	8,096	5·58	451·99	350	Mature	404, 450, 453		Werribee Fancy Clementine's King
Noble, T. M. and Sons, Maffra, Jersey (3).											
Finchley Canary 3rd ..	37992	3.1.37	30	9,870	5·90	582·53	350	Mature	354, 565, 509, 635, 549		Werribee Lord Burnham
Finchley Lillian	57279	1.3.37	18	6,447	6·53	420·68	290	Sr. 3	..	..	Werribee Lord Burnham
Wompini Vasilika ..	37997	3.1.37	15	7,008	5·42	379·97	350	Mature	359, 341, 529		Werribee Masterman
O'Neill, J., Echuca Village, Jersey (1).											
Ullina Bluebell	55673	15.2.37	25	6,249	4·91	307·08	290	Sr. 3	342	..	Ballara Fancy's King
Overend, Mrs. A. C., Sale, Jersey (5).											
Bon Accord Bright Bertha	47299	9.2.37	10½	3,872	6·04	233·93	290	Sr. 3	251, 229	..	Bon Accord John
Bon Accord Mascotte 2nd..	38011	29.12.36	14½	3,716	5·38	200·04	350	Mature	290, 305, 268, 307, 294		Bon Accord David
Bon Accord Mascotte 3rd..	47301	29.1.37	17	4,538	5·19	235·53	310	Jr. 4	271	..	Bon Accord John
Bon Accord Mystic Emma	56437	9.2.37	14½	3,344	6·13	204·92	250	Sr. 2	217	..	Tavistock Mystic Prince
Bon Accord Peggy ..	21545	17.1.37	21	4,824	5·57	268·66	350	Mature	260, 353, 364, 367, 374, 417, 342, 421, 378		Picador of Bon Accord
Pattison, F., Tongala, Ayrshire (1).											
Willow Park Peggy ..	Vol. 30	30.1.37	19½	6,768	4·23	286·45	230	Jr. 2	..	..	Fulham Beam
Payne, A. E. T., Lilydale, Guernsey (2).											
Clara's Delight 2nd of Maple Lodge (Imp.)	3932	13.3.37	26	9,098	4·69	427·08	350	Mature	..	..	Valentine's Golden Noble 3rd
Yarraview Tulip	3570	27.2.37	16½	7,934	4·47	354·46	350	Mature	370	..	Camelia's Majestic of Maple Lodge (Imp.)
Phillips, J. H., Speewa, Jersey (1).											
Ryland's Morning Glory ..	55163	13.3.37	11	4,550	5·65	256·98	250	Sr. 2	248	..	Orphanage Zaffarene's Prince
Powell, T. S., Mansfield, Jersey (1).											
Monterey Starbright's Myth	49605	3.1.37	19½	5,882	5·99	352·59	290	Sr. 3	..	..	Mornmoot Starbright's King
Richardson, W. S., Bacchus Marsh, Jersey (2).											
Five Gums Primula 7th ..	48137	29.12.36	10½	5,936	5·32	316·08	290	Sr. 3	305	..	Staghorn Clementine's Masterpiece
Sutton Lea Air Flier ..	38134	31.12.36	14½	6,320	5·70	360·49	350	Mature	342, 453, 410, 414		Banyule Petajon 2nd
Salesian College, Sunbury, Friesian (3).											
Braemore Princess Domino 4th	Vol. 14	29.1.37	29	8,144	3·16	257·11	250	Sr. 2	..	..	Cordyline Cremona Pontiac
Ingolston Domino's Beauty	3528	4.1.37	44	15,426	3·74	577·53	350	Mature	387, 341	..	Ingloston Dutch Domino
Ingolston Madge	4097	10.3.37	21	13,587	3·52	477·82	350	Mature	379, 368	..	Awapuna Dutchman
Shearman, A. and W., Darnum, Jersey (1).											
Darnum Park Molly Haha..	C.R.	5.3.37	20	6,921	4·78	330·52	330	Sr. 4	346	..	Master Clement of Glen Iris
Smith Bros., Mirboo North, Jersey (2).											
Sylvan Hill Lotus ..	55380	11.1.37	11½	5,372	5·36	288·14	270	Sr. 3	228	..	Handsome Boy 3rd of Jerseyholm
Sylvan Hill Sunflower ..	46307	25.1.37	22	6,669	6·04	402·91	350	Mature	346, 423, 375		Somerville Heir Apparent
Stephens, Dr. F. G., Vermont, Guernsey (1).											
Vermont Princess Marina ..	6431	9.3.37	23½	7,308	5·08	371·58	230	Jr. 2	..	..	Yarraview Sequel Slogan
Stirling, H. V., Meade, Jersey (1).											
Banyule Rose	51654	28.12.36	13½	6,329	5·64	357·03	250	Sr. 2	298	..	Rintoul View Fancy's Twyllsh
Thomas and Taylor, Hamilton, Ayrshire (5).											
*Carracoorte Bellona 14th..	23542	27.3.37	..	5,460	4·15	226·47	350	Mature	230, 350, 396, 260		Gerty's Producer of Carracoorte

* 210 days in test (sold).

STANDARD HERD RECORDS—*continued.*

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk. lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.	Sire.
Carracoorte Bonnie 3rd ..	24677	22.1.37	26	8,892	5·20	462·76	350	Mature	289, 374, 461, 356	Carracoorte Maiden's Laddie
*Jennewar Blossom ..	29669	28.3.37	..	5,025	4·17	209·51	230	Jr. 2	.. ..	Denbigh Ace
†Jennewar Cynthia ..	29670	8.3.37	..	5,040	4·17	210·06	230	Jr. 2	.. ..	Denbigh Ace
*Jennewar Maud ..	29672	19.3.37	..	5,235	4·19	219·42	230	Jr. 2	.. ..	Denbigh Ace
Tomasetti, B. G., Drouin West, Ayrshire (4).										
Glencorren Belle	28444	24.3.37	17	7,710	4·53	349·02	290	Sr. 3	268 ..	Gowrie Park Scottish Emblem
Glencorren Viola ..	21508	13.2.37	28½	9,156	4·67	427·85	350	Mature	281, 390, 456, 511, 439	Scotswood Michael 2nd
Leithvale Ella	20465	24.1.37	19	7,394	4·11	303·92	350	Mature	292, 346, 359, 397, 365	Gleneira Grantham
Leithvale Phyliss ..	23086	31.12.36	27	8,592	4·43	380·35	350	Mature	234, 359, 368, 412,390	Gleneira Grantham
Vaughan Bros., Girgarre, Jersey (1).										
Lynroy Graceful	58250	30.12.36	24	9,614	5·44	523·00	350	Mature	294, 566 ..	Sherborne Wyandotte King
Walker, C. S., Swan Hill, Jersey (4).										
Warwick Beauty 3rd ..	59943	26.3.37	22	7,205	4·14	298·08	330	Sr. 4	210, 261 ..	Preston Star King
Warwick Polly 2nd ..	46642	18.2.37	25	8,328	5·45	454·00	350	Mature	227, 324, 324	Preston Star King
Warwick Pollydorcus ..	42448	1.3.37	18	6,291	5·47	344·29	350	Mature	370, 358, 391, 352	Warwick Hudson
Warwick Princess Iris ..	C.R.	26.2.37	27	7,559	4·22	319·20	330	Sr. 4	273, 280 ..	Preston Star King
Warragul High School, Warragul, Red Poll (1).										
Gipps Christina	2874A	3.3.37	4½	5,220	4·60	240·14	350	Mature	250, 220, 358, 300	Woodburn Laureate
Wilson, A., Port Fairy, Ayrshire (2).										
Carracoorte Bunty 27th ..	29204	16.1.37	29	6,645	3·75	249·42	230	Jr. 2	.. ..	Carracoorte Boomerang
Green Vale Rosebloom 6th	28555	29.1.37	28	6,779	4·52	306·55	350	Mature	.. ..	Squire of Carracoorte

* 210 days in test (sold). † 240 days in test (sold)

Tubercle Free Herds

The following herds have been declared free of tuberculosis under the scheme conducted by the Department of Agriculture. Under this scheme a tuberculosis-free accredited herd of cattle is one in which the entire herd has passed two negative, successive, annual physical examinations and tuberculin tests, or, upon disclosure of infection, three semi-annual, successive physical examinations and tuberculin tests applied by a State Veterinarian or by a qualified and registered veterinarian who is approved by the Chief Veterinary Inspector for that purpose.

ACCREDITED TUBERCLE FREE HERDS.

Herd Number.	Name.	Address.	Number in Herd.	Herd Number.	Name.	Address.	Number in Herd.
1	State Research Farm	Werribee ..	259	7	Harris, J. W. ..	"Rowena," Clyde	72
2	Warragul High School	Warragul ..	35				
3	Payne, A. E. T. ..	"Yarra View," Lilydale	80	8	School of Horticulture	Burnley	8
4	Dennis, Mrs. A. A. ..	Frankston ..	14	9	Lawrence, P. H.	"Rainga," Tarrawarra	59
5	Lady Talbot Milk Supply Company	Cranbourne	418	10	Banyule Stud Pty. Ltd.	Heidelberg	122
6	Reid, Ralph G. ..	"Holmwood," Koo-wee-rup	99				

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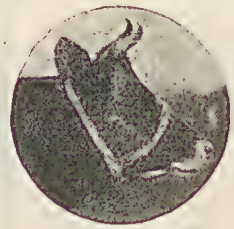

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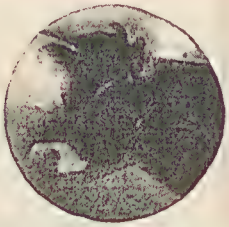

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Sire: Chandpara Valentine (762 AA). *Dam:* Victoria Avocet (3892 A).
Victoria Avocet produced 384 lb. butter-fat in 273 days.

No. 2. VICTORIA MAJOR PETER. (AA, C.R.) Born 1st August, 1936 *Price* 40 guineas f.o.r. Werribee
Sire: Woodburn Peter Pan (Imp. in utero) (1504 AA). *Dam:* Victoria Rose Major (5 AA).
Victoria Rose Major produced 455 lb. butter-fat in 273 days, and 531 lb. in 365 days.

No. 3. VICTORIA PONTIFF. (AA, C.R.) Born 14th January, 1937 .. *Price* 25 guineas f.o.r. Werribee
Sire: Chandpara Valentine (762 AA). *Dam:* Victoria Rosary (2759 AA).
Victoria Rosary produced 299 lb. butter-fat in 273 days as Jr. 4.

No. 4. VICTORIA PHILIP. (A, C.R.) Born 19th June, 1937 .. *Price* 10 guineas f.o.r. Werribee.
Sire: Victoria Donald (Vol. 9). *Dam:* Victoria Philopena (Vol. 9)
Victoria Philopena has produced 246 lb. butter-fat as a Jr. 2 in 210 days (incomplete).

No. 5. VICTORIA ARMOUR. (A, C.R.) Born 15th December, 1937 *Price* 11 guineas f.o.r. Werribee
Sire: Chandpara Valentine (762 AA). *Dam:* Victoria Amaranth (3006 A).
Victoria Amaranth has produced 354 lb. butter-fat in 273 days.

No. 6. VICTORIA ROSAMOND. (A, C.R.) Born 17th January, 1938 .. *Price* 10 guineas f.o.r. Werribee
Sire: Woodburn Peter Pan (Imp. in utero) (1504 AA). *Dam:* Victoria Wild Rose (3042A).
Victoria Wild Rose has produced 315 lb. butter-fat in 273 days.

Prices are based on the average butter-fat production of the dam in 273 days, except in the case of progeny of heifers without completed test, the price then being 10 guineas.

An amount of 2 guineas per quarter maintenance has been added to calves 3 months old and over.

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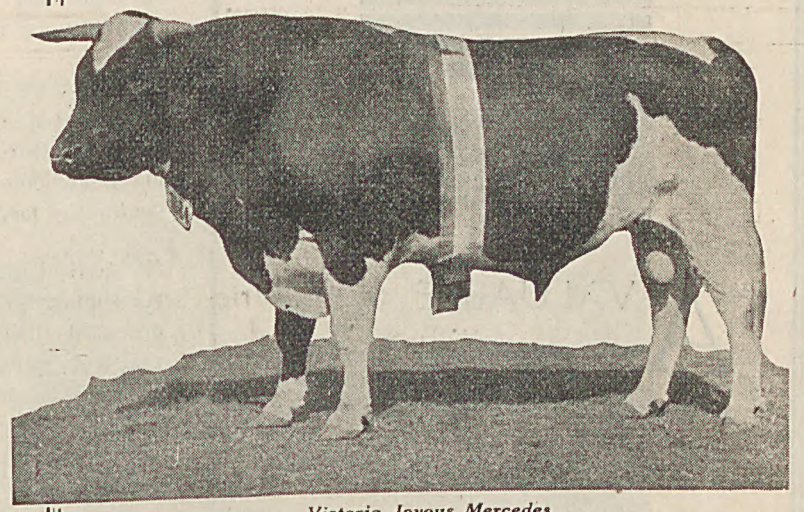

Victoria Joyous Mercedes

Dam:

Victoria Joybell, produced 15,387 lb. milk, 3·67 % test, 565 lb. butter-fat in 273 days, twice-a-day milking.

Daughters:

His eight (8) first-calf daughters have averaged 9,930 lb. milk, 3·73 % test, 370 lb. butter-fat in 273 days on first lactations.

INSPECTION -- INVITED --

1. VICTORIA MIKADO (Vol. 14) *Born 1st February, 1936*
Sire: Victoria Joyous Mercedes (985) *Dam:* Victoria Streaky Patch (3769)
Victoria Streaky Patch produced 438 lb. butter-fat in 273 days as Sr. 3-year-old.
Price: **18 guineas** f.o.r. Werribee

2. VICTORIA DANCING BOY (C.R.) *Born 19th July, 1937*
Sire: Rupertswood Inka Jo (1732) *Dam:* Victoria Dancing Girl (Vol. 14)
Victoria Dancing Girl produced 319 lb. butter-fat in 273 days as Jr. 2. 4·03% test.
Price: **11 guineas** f.o.r. Werribee

3. VICTORIA ILKA JO (C.R.) *Born 23rd September, 1937*
Sire: Rupertswood Inka Jo (1732) *Dam:* Victoria Ilkabelle (Vol. 13)
Victoria Ilkabelle produced 384 lb. butter-fat in 273 days as Sr. 2.
Price: **13 guineas** f.o.r. Werribee

4. VICTORIA BARITONE (C.R.) *Born 2nd De ember, 1937*
Sire: Rupertswood Inka Jo (1732) *Dam:* Victoria Joyous Song (Vol. 14)
Victoria Joyous Song is on her first lactation. Her dam produced 527 lb. butter-fat in 273 days.
Price: **10 guineas** f.o.r. Werribee

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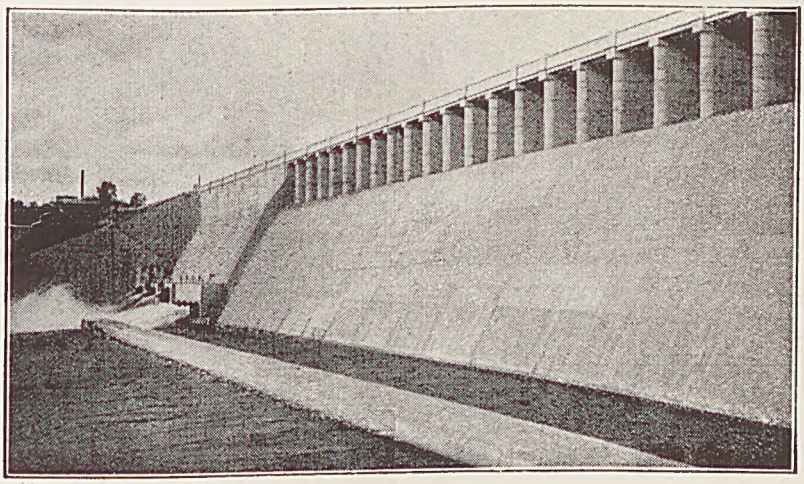

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